SEPTEMBER 1999
Volume 67 No 9

Amateur Radio

Journal of the Wireless Institute of Australia

VERN
KERR
DRIVE
VERN KERR DRIVE
Named in memory of Vern Kerr for his contribution to the community. Vern Kerr, MWIA MSWP (USA), was a radio technician for the Royal Flying Doctor Service 1934-1977. He transferred from the Cloncurry Base in 1952 to establish the Charters Towers Base, and in 1963 the School of the Air, both at 22 Dalrymple Road.
Recognised for his dedication to duty where he gave encouragement in illness, tragedy and disaster, often under atmospheric stress.
Vale 7 September 1979
Charters Towers City Council - 19.8.98

Full of the latest amateur radio news, information and technical articles, including...

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- Amateur Television for JOTA
- A Binaural DC Receiver
- An Automatic Tracker - for tuned circuits.
- VK5 Memories of Walter Burley Griffin Incinerator
- LIPD Device Upsets Repeater

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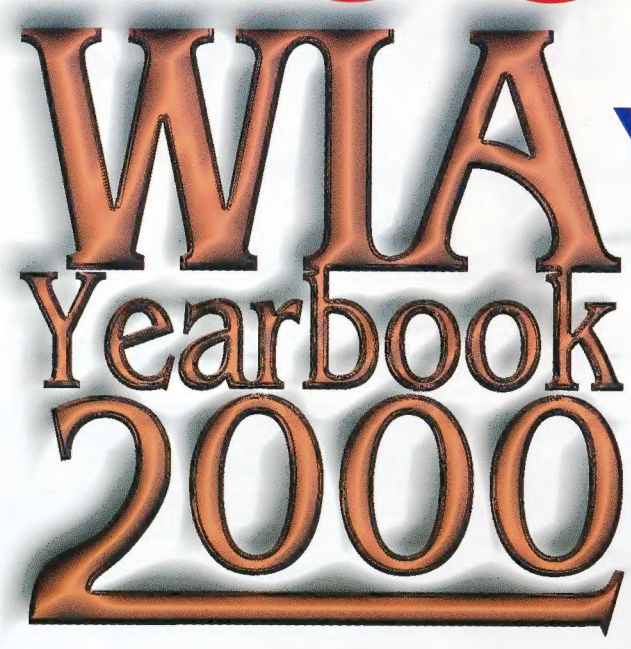

Your 2000 Callbook is on it's way !

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- ✓ Public Relations Notes
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But DON'T CALL YET
(expected to be released early in November)
The "*WIA Yearbook 2000*" will be available from Divisional Bookshops and selected outlets.

Amateur Radio

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Editorial

Editor:	Bill Rice*	VK3ABP
Production Manager:	Bob Harper	VK4KNH
Snr Technical Editor:	Peter Gibson*	VK3AZL
Technical Editors:	Evan Jarman*	VK3ANI
	Gil Sones*	VK3AUI
Contributing Editors:	Ron Fisher*	VK3OM
	Don Jackson*	VK3DBB
WIA News Editor:	David Thompson	VK2NH

*Publications Committee member

Advertising

Mrs June Fox, WIA Federal Office
PO Box 2175 CAULFIELD JUNCTION VIC 3161
Tel: (03) 9528 5962 Fax (03) 9523 8191
email armag@hotkey.net.au

Hamads

"Hamads" *Newsletters Unlimited*
29 Tanner Street, Richmond VIC 3121
Fax: (03) 9428 4242
e-mail: *newsl@webtime.com.au*

***Amateur Radio* Correspondence**

All correspondence, contributions and queries about the ***content*** should be sent to:

The Editor ***Amateur Radio***
PO Box 2175, CAULFIELD JUNCTION VIC 3161
email armag@hotkey.net.au
Tel: (03) 9528 5962 Fax (03) 9523 8191

***Amateur Radio* Delivery**

All queries regarding delivery should be directed to:

Amateur Radio WIA Federal Office
PO Box 2175 Caulfield Junction Vic 3161
Tel: (03) 9528 5962 Fax (03) 9523 8191

Registered Office

10/229 Balaclava Road
Caulfield North VIC 3161
Tel: (03) 9528 5962 Fax (03) 9523 8191
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Our cover this month

Mrs Joy Kerr stands beside a fitting recognition of her husband, Vern Kerr's contribution to the outback

Photographer not named

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted, at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
National Radio Society
Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

Registered Federal Office of the WIA
10/229 Balaclava Road
Caulfield North Vic 3161
Tel: (03) 9528 5962 Fax (03) 9523 8191
http://www.wia.org.au

All mail to
PO Box 2175 Caulfield Junction VIC 3161

Business hours: 9.30am-3pm weekdays

Acting Federal Secretary
Peter Naish VK2BPN

Federal Office staff
June Fox Bookkeeper
Rita Trebilco VK3IF Examinations Officer

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Richard Jenkins VK1RJ

EDITORS COMMENT

Jottings

I have always been rather envious of people such as the celebrated Wayne Green of "73 Magazine" fame who, in their heyday, were able to write editorials that went on for page after page with topics by the dozen!

There are people who would prefer that I did not write an editorial, or if it must be, that it should be nearer the back page rather than page 2.

These people may get their way, experimentally at least, quite soon. That is if a new editor for this magazine can be found. See the advertisement on page 39 of the August issue. To be fair, the "editorial at the back" school really want a re-arrangement to put technical articles nearer the front, and this may happen soon.

Meanwhile, I shall continue my jottings! (This is editorial number 162!)

What are jottings? They derive their name from the smallest letter in the Hebrew alphabet. (jot, also spelt jod) The phrase "jot or tittle" means something vanishingly small (but still perhaps worthy of being "jotted down"). So we might define jottings as tiny trivialities!

Before I go, I must comment on the trivia item (labelled "Snippits") on page 5 of the August issue. At least ten of the names have been mis-spelt. This was not deliberate; the item was a last-minute filler, editorially unseen. Why not "have a go" at answering the questions as invited, and we will publish the list, correctly spelt with answers in the October issue.

Bill Rice VK3ABP Editor

NEW WIA MEMBERS

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of July

L21092	MR J L BUTCHER	VK3DSA	MR D CRAVEN
L31549	MR M HARDY	VK3FJS	MR J W H SCHULTZE
VK1BUD	MR T O RYMES	VK3FLC	MR P R BEECHEY
VK1FS	MR C HASTIR	VK3GLX	MR H JOHNSON
VK1XAI	MR J B HERRMANN	VK3JNO	MR C LADIGES
VK2AJY	MR J JEFFERY	VK7HGO	MR G P O'SHEA
VK2AM	MR A R MCLEAN	VK8CE	MR W ELDER
VK2GPB	MR P R DERBYSHIRE	VK8MS	MR M G SELLERS
VK3BYY	MR J M HARRISON		

Lost, stolen or strayed

Alan (VK6CQ) here.

Unforunately my brand new Yaesu FT - 100 was ripped out of my car in Adelaide during my drive over to Tasmania.

Real mess of the car door & under the seat (where it was bolted) was made to get it out.

Serial Nr 9F0 420 36 (9F0 420 36).

Not much use to anyone else minus the manual & connecting cables, but I guess the idiot who took it thought it was a CB or CD player.

Could you put it in the stolen equipment register You never know, it may show up in a Cash Convertors sometime.

It was going to have been used on Macquarie Island

(I've been issued with VK0LD)

Comment

Federal President, Peter Naish VK2BPN.

FROM THE PRESIDENT I do not wish to enter into the debate as to whether or not January 1st. 2000 is the beginning of a new century but I do intend to highlight the fact that next year is a very special one for Australian radio amateurs. There are a number of important events scheduled for 2000 which the WIA is actively involved in or has a significant interest in the outcome.

Of course, everybody knows that the Olympic Games will be held in Sydney in 2000. There will be huge numbers of visitors to Australia and these will certainly include many amateur radio enthusiasts from overseas countries. The ACA has told us that they are prepared should there be a large demand for temporary visitors operating licences. We have offered our services to the ACA should they need assistance with this task. In any case we may expect to hear many of these visitors sharing our bands with us.

In addition, the NSW Division of the WIA will be operating special Olympic Stations with appropriate call-signs to assist radio amateurs visiting the Olympics and to celebrate this great event. The WIA will be a practical supporter of the Games and ensure that any of its facilities or services as may be needed is provided within the Spirit of the 2000 Games.

In August 2000 the WIA will be hosting the IARU Region 3 convention in Darwin. This is a major activity and includes policy debates on many important agenda items for forthcoming WRC meetings. Preparing for the Darwin convention will occupy a lot of time for our specialist coordinators and delegates. You will find elsewhere in this month's "AR" an update on the work that is currently taking place. There will be further regular reports to keep you abreast of progress and how you can be involved.

The WIA Call Book for 2000 will be a bumper edition, worthy of this special year. Indeed, we hope it will be a collector's item that will continue to be useful well into the new century (whenever that starts!). This will become available for purchase in the months ahead and will contain details of lots of things that you need to know about amateur radio in Australia.

In 2000 the WIA intends to continue its vigorous pursuit of a number of high priority initiatives which seek to rationalise and improve our operating privileges. Many of these are interwoven with our international activities because what happens overseas will surely determine how Australia reacts. Last month you will have read in "AR" a report on varied issues currently on the ACA Liaison Committee agenda.

We have less than four months to go before 2000 dawns. Just another year maybe, but let's work together to make it a memorable year, one in which we can feel proud to be associated with amateur radio. As I always say, this is your WIA, let's all make it work the way it should.

Peter Naish,VK2BPN WIA Federal President

WIA News

ACA says "Use it or Lose it"

—Investigation into radio licence hoarding

Relax... they're not talking about Amateur Radio — yet. The Australian Communications Authority (ACA) recently released a discussion paper outlining options to address the alleged hoarding of low power open narrowcasting (LPON) radio licences.

Options outlined in the paper include the possibility of applying a 'use it or lose it' condition to licences, increasing LPON licence fees, or issuing an LPON class licence.

There are currently more than 1500 LPON licences on issue, but more than half of these are not being used to provide a radio service. There is a view in the community that many of these licences are being stockpiled, possibly with a view to later sale.

LPON services provide a wide range of program formats on FM radio to limited reception areas, (usually 2km radius in urban areas). In most areas, only three broadcasting frequencies at 87.6, 87.8 and 88 MHz (FM radio) are available to potential licensees. Typical LPON formats include tourist or racing information, community news or niche music programming.

The ACA is concerned that communities or groups with limited resources are being denied the use of radio broadcasting frequencies, thus being prevented from producing and distributing their own radio services.

While this issue does not directly concern Amateur Radio, it's interesting to note that the ACA's interest goes beyond the licence fees collected. We can only wonder if and when they'll turn their attention to the how well we Amateurs are using our allocations.

The ACA's discussion paper can be found at http://www.aca.gov.au/issues/discussion/hoarding.htm. Deadline for comments was 20 August (unfortunately the media release appeared after the deadline for the previous issue of this magazine.)

A summary of comments received will be made available on the ACA Website.

From Media Release No. 45 of 1999 - 22 July 1999 (www.aca.gov.au/media/45-99.htm)

New Email Service for Australian Hams

A new, FREE, web-based email service, for Australian Amateurs has been created. Hams can now get their own email address (or update their old one) to callsign@ausham.zzn.com. This service is provided by 14-year-old Daniel Bartlett, VK4HDB, who hopes to make this a service that all Australian Amateurs will utilise. The website is available at http://ausham.zzn.com and enquiries may be forwarded to webmaster@ausham.zzn.com

Special Event Station VK2000

The New South Wales Division of the WIA will be operating Special Event Station VK2000 next year, to commemorate the Sydney 2000 Olympic and Paralympic Games. The Division also hopes to have the use of the special event callsign AX2000 during the four weeks of the games.

Another mailing list has been established for announcements about Amateur Radio and the Games; to subscribe, send a blank email to vk2000-subscribe@onelist.com

WIA News

continued from previous page

American Amateurs to play key Y2K role

Amateurs in the Radio Amateur Civilian Emergency Service (RACES) will be standing by to assist in the event of any communication breakdowns when the clocks tick over to 1st January 2000.

Although emergency officials say the likelihood of widespread phone or computer outages is minimal, they have asked RACES volunteers to help out. That means some ham radio operators in New Jersey will be ringing in the New Year at police departments, hospitals, nursing homes and county communications centres.

Emergency workers will be holding a series of emergency drills, using various Y2K scenarios and ham operators, across the state in the next several months.

"You could have everything from a big nothing to a disaster," said Bill Peterson, a RACES member in Morris County. "If it's disaster, we'll be ready to communicate that there is a problem. "But one thing we can't do," he said, with a nervous chuckle, "is to solve the problem." Most other counties will have ham operators on standby, ready to use their wireless equipment to report any phone outages or other utility disruptions.

"We think we're got everything under control, but you can never be too safe," said Morris County Administrator James Rosenberg. "There is some concern that at 12:01 a.m., we could all be sitting there and think everything's great because we're not getting calls of complaint. But maybe that's because the phone system's not working. So we want to be prepared."

"Communications have come a long way, but just in case of problems, we can fall back on ham radio," said Kerry McGuinness, a spokeswoman for GPU Energy.

RACES developed during World War II, when the military took over all amateur radio frequencies for use in military applications. But the FCC provided some small groups of frequencies for emergency situations, to be accessed by specially licensed ham operators. They became the first members of what is now known as RACES, which has about 2,000 members in New Jersey.

Bob Schroeder, communications officer for the state Office of Emergency Management, said it was logical to turn to ham operators, who have filled the breach in previous disasters. "They work for free, they are available and they are very resourceful," he said.

(from New Jersey Star-Ledger http://www.nj.com/jersey/ledger/c0f57e.html)

Sounds of Amateur Radio

The VK2FLR VHF DX sound archive is now operating again. Mike Farrell VK2FLR say he has added new material, including samples from last year's Leonids meteor shower.

The archive can be accessed on Internet at http://www.minecost.com/hamstuff/

From Mike Farrell VK2FLR on the VK-VHF list

IARU - World Amateur Radio Day

The International Amateur Radio Union's World Amateur Radio Day takes place on the 18th of September. This year's event celebrates Amateur Digital Communication. From next year the event will shift to the 18th of April, the founding day of the IARU.

Get Lost

British Aerospace has developed a new "personal locator beacon" for the Royal Australian Air Force. The beacon, named "Warrendi" after an aboriginal word meaning "to look for", employs satellite technology, and is intended for use in search & rescue operations with downed pilots.

from What's New in Radio Communications, June/July 1999

New Digital TV Standards

Standards Australia has released draft standards DR99047 and DR99095, which cover the technical requirements for terrestrial digital TV transmitters and receivers. DTV transmissions are due to commence in January 2001.

The drafts were prepared jointy by the Australian Broadcasting Authority and the broadcast television industry. They are based on the European digital video broadcasting (DVB) standards, adapted for Australian conditions.

from What's New in Radio Communications, June/July 1999

A recent addition to the WIA Federal web site is the Current Issues section, where you can download submissions made by the WIA on your behalf on various issues of importance. A quick precis follows:

Overseas Visitors to Australia and Reciprocal Licences

The WIA has proposed that Australia adopt the CEPT licensing arrangements currently in use throughout Europe and the United States. European Conference of Postal and Telecommunications Administrations (CEPT) Recommendation T/R 61-01 allows Amateurs to operate in other particpating countries without having to obtain a special visitor's licence.

Implementing CEPT T/R 61-01 would ease the ACA's administrative burden during the Sydney Olympics, when a large number of overseas Amateurs are expected to arrive in Australia. At the same time, Australian Amateurs could operate in CEPT-participating countries.

Spectrum Arrangements for the Amateur 80 Metre DX Window

The WIA recently responded to an ACA options paper pertaining to the 80-metre band "DX window". The options presented by the ACA were:

* to maintain the status quo
* to maintain the status quo, but to make Amateurs primary in the sub-band
* to extend the DX window by 18 kHz, with the WIA paying the cost of frequency changes and the loss of 18 kHz below 3700 kHz.

The WIA would welcome primary status in the DX window, but still seeks an extension of the sub-band and rejected surrendering other parts of the 80m band. Pointing out that allocations to other users in this band have reduced by half since 1995, and that radiocommunication licences do not guarantee tenure, the suggested payment of costs of other users' frequency changes was also rejected.

Allocation of an LF Band to the Amateur Service

The WIA has again presented a submission to the ACA, for the creation of a new Low Frequency allocation between 165 and 197 kHz. When the submission was first presented in 1993, it was rejected as there was no Amateur allocation existing in the ITU's allocation tables. Since then, 13 countries have authorised LF Amateur allocations, so now the ACA would be setting no precedents in accepting the proposal.

In Region III, 160 to 190 kHz is allocated to Fixed Service (primary) and Aeronautical Radionavigation (secondary), which is primary between 190 and 200 kHz. In Australia, 160 to 190 is allocated to Aeronautical Radionavigation, but the band is not used for this purpose.

Both New Zealand and Papua New Guinea permit Amateur operations between 165 and 190 kHz. In Australia, the existing activity in these bands seem to be Amateurs operating experimental stations on 177.5 and 196 kHz.

The WIA has proposed a 15kHz wide allocation, preferably 175 to 190 kHz, allowing narrowband modes, including digital signal processing modes but excluding FM. Existing Amateur power limits should apply and the band be available to all licence grades except Novices.

Promoting the hobby

Richard Murnane VK2SKY
PO Box 1247, North Sydney NSW 2059
pr@wia.org.au

When you have visitors in your shack, or when you demonstrate Amateur Radio to others (for example during JOTA or community events), do your give them something to take away, to encourage them to take up the hobby? If not, well, pretty soon you will.

Richard VK2SKY is working on a booklet about Amateur Radio, which you will be able to download from the WIA Federal web site, to print out and give to those you think might be interested in becoming Radio Amateurs. The booklet will give a brief introduction to many aspects of the hobby, and guide them to your local radio club (and hopefully the WIA!) Hopefully, this will become a valuable tool in promoting the hobby and gaining new members for your radio club.

But for this to become reality, Richard needs YOUR help. Can you write a small piece about a particular aspect of Amateur Radio that you enjoy, be it DXing, foxhunting, emergency communications, QRP, satellites, or any other aspect of the hobby? Could you even write a short piece about what you enjoy about Amateur Radio?

Even as little as 50 words along the lines of "I like Amateur Radio because..." would be useful, but if you can write a bit more, say 100-200 words on a particular topic, that would be even better. The items do not need to be technical, only to get across the idea that Amateur Radio is fun!

The aim is to make the booklet about eight A4 pages long, so it would be easy to produce as a handout for newcomers. Richard will do all of the layout and design, and will make the booklet available in Adobe Portable Document Format, so all you will need is the free Adobe Acrobat reader to print it out on your computer.

Richard can't do all the work by himself (for a start, he doesn't engage in every single aspect of the hobby!), so the more who contribute just a little bit, the better the result will be for all Amateurs, clubs, and maybe your WIA too.

You can contact Richard by email to pr@wia.org.au, or by post to PO Box 1247, North Sydney NSW 2059.

Remember that many hands make light work, so please put pen to paper (or fingers to keyboard) and see what you can come up with! Don't worry if you're "not good at writing", as Richard can tidy up your words. The important thing is to "be in it!"

WIANews
Richard Murnane VK2SKY

I'm in Ham Radio because I love it!

Next time someone asks you what they get by being a member of the WIA, ask them to consider the following from Ian VK5XE, which appeared on packet and some Divisional broadcasts recently:

Ian says, "Well I've been a member since about 1978. Can't remember really. However I first joined the WIA when studying for the novice licence. I had a TS520 to listen to the ham bands and for practice CW. It was recommended I join the Institute by a local ham who was helping me to study.

Finally got my licence in 1980, VK5NOT.

I found the QSL bureau the most useful tool at WIA and got Amateur Radio Magazine. Not being a techno weeni most of the articles in AR seemed heavy going, but probably very useful to someone building this and that. These articles were written by volunteers, people who had had some success with a project and decided to share that knowledge with everyone else.

You may have noticed "volunteers"? Yes, our WIA is made up of many volunteers. For the doom and gloom "knockers" I wonder if YOU have ever volunteered, only to have someone knock your efforts!

As for the membership price structure, well I guess some OTHER volunteers tried to work out the fairest way to charge its members.

Next came the novice 2 metre privileges. Well a whole new world of radio for me, thanks to the WIA.

BUT to talk further away from my area I needed a repeater! Guess what?

The repeaters in my area were all built and maintained by volunteers and the licence fees all paid for by WIA. They probably even used a percentage of MY membership! [How dare they?]

So what next can I do about that? Go to a few working bees at the local repeater site. Not the tech stuff but cut the grass around the tower, paint anything standing still, climb the tower, lots of things as you can imagine.

So after 13 years as VK5NOT and a wonderful time on air meeting lots of FB folk I decided to TRY for my full call.

Where do I go?

To the WIA Publication Officer.. "got any books I can read to do my AOCP ?"

Yet another "volunteer".

Read all the books. It sinks in first try [like hell].

I listen to the SLOW MORSE net and guess what, this mob have a different volunteer every night of the week. Amazing!

So, I'm all schooled up on the theory and able to copy CW OK at 15wpm. Off to the WIA Examination officer to do the TEST. What a patient volunteer this WIA bloke is.

So here I am today enjoying the packet radio network, you guessed it, MORE volunteers.

I hope you all get what I'm on about. Not the politics that might go on. It's in every organisation unfortunately. If you stop and think what you're getting for the money I think its a "fair deal"!

Ever tried to join a golf club, or sporting club of any kind?

What else can I say? I'm in the WIA hoping that I'm represented at Government level by somebody in the organisation. It is only weight of numbers (voters) that affect change in government planning.

I'm in WIA to help out where I can at grass roots level and enjoy the fellowship of others who do the same.

I'm in HAM RADIO because I love the hobby, always curious to see who might be on air next, enjoy a CW QSO every once in awhile and most of all say hi to the fine folk I've met and hope to meet in the future.

Whether YOU decide to join WIA is your choice. I hope if you hear me on air you might like to say G'day... as I would."

Ian's words highlight the importance, not just of being a WIA member, but of being an active member. What could you do to improve the WIA?

(Don't just read this –show it around to non-members.)

ar

Divisional News

VK1 Notes

Forward Bias

Peter Kloppenburg VK1CPK

The guest speaker at the July general meeting was Tex Ihasz, VK1TX. Tex made a trip half way around the world recently to pursue his interest in amateur radio and to visit friends. He spoke about his visit to the Dayton Hamvention in Ohio, USA, (http://www.hamvention.org) which was being held over a period of three days, the people and fellow amateurs he met there, and his visit to the United Kingdom and Russia. His talk was backed up with photographs, magazines and catalogues, and souvenirs. Tex gave an interesting account of what he saw and did at Dayton. Most amazing was the size of the convention area. As big as the show ground in Sydney! With numerous stands from amateur equipment manufacturers, and endless rows of stands with trash & treasure; second-hand gear and antennas of all kinds, it was a sight to be seen.

Many amateurs in the US know Tex as an avid DX operator and from the 20-metre net that he runs. When they heard of his impending visit, many invitations came his way. A notice board covered with photos of his hosts showed where Tex had been and whom he had met. While in Moscow, Tex observed that many amateurs live on the top floor of apartment buildings, with their antennas situated right above them on the roof among the TV antennas of their neighbours.

A radio amateur who is probably well known to some of you, and who has been absent for a number of years, has returned to the ACT. His name is Olaf Moon, VK1MOJ. Much of his time is spent participating in contests and he is keen to meet local amateurs with a similar interest in amateur radio.

Novice Licences

The executive of the VK1 Division has decided to set up a Novice Licence course. An "Education" position has been created on the committee, which is filled by myself. The venue for the course is likely to be a room at the Griffin Centre, Civic, Canberra City. Course cost will be modest and affordable. Three subjects will be taught: Electronics and Regulations, with the option of Morse code sending and receiving. The starting date of the course will be announced as soon as I find someone suitable to teach the subject of 'Electronics for the Novice Amateur' and Morse. Text for the course will be "The Novice Operators Theory Handbook", by Graeme Scott, VK2KE. We will obtain these in bulk to save cost. Anyone who is interested in teaching the subject(s), or attending the course as a student should contact either myself by phone on (02) 6231790, fax 6296 5712, email pkloppen@dynamite.com.au or the President, Gilbert Hughes on (02) 6254 3266, email ghughes@dynamite.com.au. Announcements regarding start date and class hours will be put on the Sunday broadcasts, Packet, and sent by letter to those who have given their details to me or Gilbert.

The next general meeting will be held at Room 1, Griffin Centre, Civic, Canberra City, on 27 September 1999. Cheers to all.

VK4 Notes

QNews

By Alistair Elrick VK4FTL
WIAQ Councillor and QTC Editor

The July WIAQ Council Meeting saw the Councillors meet at the home QTH of VK4BBS, Brian. A report from Federal President Peter Naish was read. This contained among other things, an ACA options paper regarding the 80 metre DX window, a paper on LF band proposals and on Reciprocal Licences for the duration of the Olympic Games.

VK4 President Col VK4ACG commented on the possible extension to the 80-metre section based on either, the removal of or cooperation with, the current operators. Most contacted so far are amenable, as commercial frequencies are generally not used at night. In VK4 the Dept. of Primary Industries and Kyle Communications are two operators who have prime frequencies in the band under consideration. So there is some progress in this matter after all the waiting.

Col also presented an opportunity to promote AR in conjunction with the Brisbane City Council GOLD program. GOLD is a program initiated by BCC and involves promotion and public relations for the activities of the 55+ age group. GOLD is "Growing Old, Living Dangerously". We will be looking forward to presenting Amateur Radio in the next round of activities scheduled for early February 2000.

Fun Day 2000

VK4BBS, Brian reported a date for the Fun Day could not be set yet, as the date for Gosford Field Day was still not determined. It was decided to try to keep it as last year, to the weekend PRIOR to Gosford.

Coastal Ducting goes Atomic?

Friday evening July 16th Gavin/VK4ZZ was going about his sysop duties when he managed a glance at the BBS screen and saw VK4RCA Mt Bellenden Ker packets direct. Being a lad to have a go, he did just that and connected direct to VK4RCA by just using a j-pole and 20 watts! (That's about 300km with nothing fancy!). Realising that there was a mother of all temperature inversions just above him, Gavin then tuned in the Mt Bellenden Ker voice repeater and sure enough, there was Jeckel/VK4JKL and Joe/VK4VDX having talkies. He listened in and at about 23:30 local time when the signals were full strength, tried to get into RCA voice. He was successful and talked to Jeckel and Joe until about midnight when the inversion dropped out. There has also been good temp inversion ducting from Mt Stuart to Bowen during the last week or so. Who would have thought that you would get temp inversion ducting in the winter? Only in the tropics...

TARC - WICEN

This Magnetic Island to Townsville Swim Event Report was submitted by Les, VK4ALS.

WICEN operators had a very good weekend, starting with the Civil Reception held at the Council Chambers on Saturday. Sunday morning came around with a few things happening that would test the ingenuity of the WICEN operators. Don/VK4MC had to navigate through a nasty road accident. Dave/VK4FUY had to dash around the bay to replace a battery and everyone involved had to cope with a change of plans, when it was discovered that they would have to board the tow boats BEFORE going to get the swimmer cages!

Les/VK4ALS and Ian/VK4ZT set up the WICEN repeater on a hill just behind the old Customs House and the repeater was very happy there, operating faultlessly until deactivated about 2pm in the afternoon. Thankfully there were no incidents and the fastest swimmer made it across the line on about 1hr 30mins whilst the oldest competitor broke the 2hr barrier with a 1hr 58min effort!

To Les/VK4ALS, Ian/VK4ZT, Steve/VK4JUS, Peter/VK4PVH, Don/VK4MC, Dave/VK4FUY, Pat/VK4MUY, Alan/VK4PS, Ken/VK4HAI, Bob/VK4WJ, John/VK4MAV, Iain/VK4IGM, Sheila Morrison and Gavin/VK4ZZ, many thanks for providing the equipment and operational skills that made this communications support event a very successful one!

The swim organisers are hinting that next years swim program will be very prolific, being the Olympic year, and that with a vastly expanded event program they will probably need more WICEN participation. So there you go... advance warning for a hectic calendar in 2000.

Intruder Watching

VK4XT Mike reporting in Dalby clubs "Mini News" talks of having audio recordings of intruders on the 146.675 Club repeater. The 2 or 3 intruders were conducting comparison tests with that repeater and a local UHF CB repeater. One was mobile and travelled from Memerambi to Kumbia in order to check out the coverage they could get. They were using the calls 130 and 920. Later heard as 130 and 192, also as Steve and Bill.

They were challenged by a couple of amateurs but simply said something along the lines of "you don't own the airwaves".

The club decided against turning the repeater off in order to get more info on their possible QTH. Try listening to the repeater to identify the voices of these people. Listen to the input frequency of the repeater (146.075) when the intruders are active in order to see what area they are actually operating from. Best of all use a small directional antenna to get a bearing on them, especially if they operate from a fixed location.

73's from Alistair

VK6 Notes

Chris VK6BIK
(chrismor@avon.net.au)

WIA Membership is Fun!

I have been giving some further thought to the problem of low WIA membership with respect to the overall number of registered amateurs and SWL's in the country. The subject is quite topical at present. It has to be said that it is obviously just not right that a minority of amateurs is being left to carry the cost of keeping amateur radio alive in Australia. I believe that most amateurs, regardless of how they feel about the way the WIA is presently structured, or the way the work of the WIA is carried out, would agree with me.

Somebody has to pay for our capability to represent our mutual interests and ourselves. Otherwise there is just a black hole followed undoubtedly by rapid and severe erosion of our unique privileges. I cannot believe that the vast majority of amateurs are harbouring grudges against the WIA, nor do I believe that we are selfish or mean as a group. Therefore the answers must lie elsewhere. The more of us that put our minds to this vexing problem, the sooner we should get to the solution(s).

For what it is worth, this is what I think;

(1) It is apparent that the majority of hams, having risen to the challenge of passing the exams and experienced the early excitement of installing equipment, antennas etc, and then enjoyed the novelty of unfettered operating, have now simply become inactive as early interest wanes, and other activities and pressures compete for available time. As a natural consequence WIA membership lapses and is not renewed. Licences, on the other hand, are renewed "just in case"! I suspect the majority of amateurs fall into this category. It seems to me that if we can help these "silent amateurs" re-kindle their initial interest, which would have been substantial, then half the battle is won. One of the ways we can do this, is to focus on the "fun" aspect of the hobby —to me that means simple, and practically useful, construction projects, antennas (and more antennas), more WIA sponsored activities of all sorts, and many more "operating" articles/columns (ie, DXing, rag-chewing nets, award hunting, contesting, field days, satellites, weak signal work, etc). Of course, the WIA's magazine already does this (and very well too) with several columns of this type, (eg VHF/UHF – An Expanding World), but we are preaching to the converted. I think the trick is to get the other (commercial) magazine (s) to do more of the same, or we put our own AR on the stands occasionally (a composited quarterly perhaps?). Somehow we need to reach a wider audience. The non-operators need to see what they are missing.

(2) Once membership has lapsed (for whatever reason), it can be for many, a bit of a hassle to renew. Many of us just don't like the act of paying bills! If a renewal notice is received well out of sync with the licence renewal notice (say 6 months later), an inactive amateur will question the worth of continued membership. On the other hand, if the renewal notices could be received together, they could also be paid together, how much simpler is this? In some European countries, membership of the representative body is compulsory, and fees are collected by the licensing agency. I am not advocating this here (although I would love to), but surely the Australian authority also understands and sympathises with the need for a strong representative group with which they can do business? Can they be persuaded to solicit renewals on our behalf, perhaps with a percentage of the fee as payment / compensation? Second best choice, can we slip our own renewal notices into their licence renewal envelopes? We could share some of the mailing costs. The economics of this should be good for them and for us (economies of scale?).

Beacon Update

Well the Augusta project proceeds slowly. The main holdup is the negotiation of a site - as always. The current position is that an approach has been made to a commercial operator by phone and the result was reasonable cause for optimism. This has been followed up with a letter (about 3 weeks ago) and a reply is awaited.

The beacon hardware is largely ready to go, with Tx's for 144, 432 and 1296 MHz. Antennas are nearly complete. Naturally advice of site availability would trigger much activity to do the finishing touches.

The purpose of the beacons at Augusta is to provide a propagation indicator both eastwards across the well-known Bight path and northwards towards Perth and beyond, where there is likely to be extended ducting as well. (*Thanks Don VK6HK*)

VHF activity

The VHF Group recently held a "Winter Sprint" contest, run over 1 hour, shortly after the weekly broadcast. Those who didn't participate are "square" —it was tremendous fun and you lost out big-time! I took the Elderly Irish Gentleman (Conn VK6PM) with me and we operated portable up one of the many high hills around Toodyay. Talk about the Laurel and Hardy show!

We arrived at our (yet to be) chosen location "on time", but forgot that it takes a bit of time (that stuff you can't stretch) to set up a portable station, and the contest was

nearly half way through by the time we got properly under way on all bands. Of an impressive array of 5 VHF antennas that we brought along, we could only get one working, one which I would hesitate to call an antenna, made (ie. bent straight and cut) from one of Conn's surplus coat hangers pushed through a hole drilled into his car's roof-rack. Nevertheless, we had great fun working simplex into Perth, Greenhills, and elsewhere, on 2m, 6m (1/2 wave vertical), and tried also on 70 cm. I don't know who won the contest, we didn't for sure, but at least we supplied a new square to a few and learnt a lot about the (poor) state of our equipment.

2m SSB

For those keen to test their 2m-sideband capabilities, there is a daily sked involving stations in the South and SW of WA. Your best chance of a 2M SSB contact is weekday mornings between 7.15am & 7.45am Perth time. A group of operators can be found on 144.120MHz.

At 7.15am, everybody tries to make contact with VK6AS in Esperance.

At 7.30am, everyone then works VK6WG in Albany and

At 7.45am, a call is then made for VK6XLR in Geraldton (this one is temporarily in abeyance)

Liaison frequency is on 40M, 7.140MHz. 70cm and 1296 cm equipment can also be tested.

Local Repeater info

A new dual-band antenna has been installed on the Tic Hill mast and both repeaters on 2m & 70cm are now running into the one antenna. There is interference presently getting into the 70cm repeater, DF'ing so far puts it in the Midland area, so quite close to Tic Hill. (LIPD not being blamed, (yet !) but VK6TRC is on the trail).

A new 70cm repeater is in the early stages of planning & construction. It is to be sited in Victoria Park, about 5kms east of the city and should provide good coverage to handhelds in the city & inner city suburbs as well as around the foreshore areas of Perth, East Perth, South Perth & Burswood. Site tests conducted so far show that UHF coverage from the site is good and providing infill coverage to these areas, where the repeaters on the escarpment can be difficult to access from handhelds. (*Thanks Rob 6TRC*)

From the Minutes (Aug Council Meeting)

Dave VK6IW advised that there were three new membership applications for the month. These are Marvin Feldman VK6WW, Craig Macintosh SWL and David Rankin 9V1RH. All were warmly welcomed to the Division. There was concern expressed over the variable support for the monthly on-air net. Only two country members had checked in on the last occasion. *(How about it fellow cockies, even just to let the Councillors know we are listening? We don't want to lose this new facility for airing opinions / grievances).* Information had been received about a VK2 AOCP correspondence course, which would be publicised shortly.

Will VK6UU proposed that a new "CW Survey" be conducted of all VK6 amateurs using the simple question "Should Morse code proficiency be retained as an examination requirement – Yes or No". Council agreed with the proposal after considerable discussion. Input would be sought from all and any media, with one vote per licensee allowed. Will VK6UU will manage the survey?

It was noted that VK4 had put forward a motion for the consideration of Federal Council that a new model for restructuring the WIA should be sought. The motion had lapsed at the last meeting because of the unfinancial status of VK4. As the motion had some merit, could VK6 pursue this on behalf of VK4 if the latter were unable to do so?

Neil VK6NE advised that in discussion, Jim VK6RU had indicated he wished to resign as QSL Manager at the end of 1999.

Note that minutes of Council Meetings are archived on VK6BBR at C:\wiamins\council

73 from Toodyay, Chris VK6BIK
(chrismor@avon.net.au)

VK7 Notes

QRM

First may I apologise for nil Tassy notes for two months - they would not have been very relevant from the other side of the world and my efforts to get a replacement scribe did not work!

Overall there would seem to be an upsurge in interest around the island, winter usually sees a drop in our monthly meeting attendances but reports indicate the very opposite —a very gratifying trend.

The biggest problem financially in the state is the costs of our Hobart main 2metre repeater. Sky high rents and associated costs are crippling our southern branch. A new site is being sought but the biggest consideration is that it has to be able to access the Mt Barrow repeater for our weekly broadcasts to get through to the north and northwest.

The Southern branch is appealing for many more dedicated amateurs to make themselves available as operators, announcers, recording agents etc for our broadcasts. Help is also sought for the Morse classes. Their novice/full-call classes are working well.

Competition is strong for the lead in the foxhunting points scoring. As this is written, VK7JUF and partner are on top with 30 points with VK7FB hard behind on 29 points. Nail-biting stuff this!

It's nice to be appreciated. Robert, VK7RB and Garry, VK7JGD were recently presented with certificates from the Huon Valley Scouts for their JOTA help.

The state lost another ham recently with the death of Geoff Dineen VK7DF. Sympathy is extended to the family.

Bimonthly family dinners at good restaurants and excellent meeting guest speakers are keeping the northern branch very much alive. They are at present searching for materials for temporary antennas to service the JOTA sites.

The northwest branch members at their August meeting were fascinated by a brilliant talk on the background to the Y2K problems by computer whiz Jim VK7JH. The branch has been concerned at moves by the Government to change the status of the Dial Range —our main repeater site. We have a yearly lease on a two-acre mountaintop.

At the moment things are quiet but it's a case of "eternal vigilance".

Ron VK7RN, State President.

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Fax (07) 4779 1161
thetarcinc@email.com

T A R C

CLUB NEWS

Melbourne Radio Rail Fun Day

Your Participation is Invited

Buoyed by the success of the first *Radio on Rails* Contest, held back in April, Melbourne's Moorabbin & District Radio Club is holding its next *Radio on Rails* on Sunday October 10.

Radio on Rails encourages amateurs to operate from trains and trams around Melbourne. Participants get to experiment with VHF/UHF portable equipment and antennas and demonstrate amateur radio to the general public. Entrants also meet other contestants, thanks to the unique 'eyeball contact' rule.

The rules for *Radio on Rails* appear below. The only change is the inclusion of seventy centimetres as well as two metres. As with last time, both home and train/tram mobile stations may enter. Participants are invited meet for lunch afterwards at a city venue to be arranged on the day.

Don't miss October's *Radio on Rails*. It's on Sunday October 10 between 9am and 1pm. Keep this date free and give this fun contest a go.

Peter Parker VK3YE
MDRC Publicity Officer

MDRC *Radio on Rails* Contest Rules

Object: To make contact with operators on board trains and trams around Melbourne.

Date: Sunday, October 10, 1999

Time: 9am - 1pm

Bands: FM voice segments of two metres and seventy centimetres only

Mode: FM

Sections:

A. Transmitting Mobile (in train or tram, also includes waiting at railway stations or tram stops)

B. Transmitting Home (includes operators at home or in a car)

C. Listening Mobile (in train or tram, also includes waiting at railway stations or tram stops)

D. Listening Home (includes listeners at home or in a car)

Contacts: Train or tram mobile stations may work (or hear) any station for points. Home station entrants may work (or hear) train or tram mobile stations only for points.

Repeat contacts: Repeat contacts are valid for scoring purposes provided at least one hour has elapsed between them.

Use of repeaters: Contacts on repeaters count for scoring purposes.

Exchange: Train or tram mobile stations give their nearest railway station, tram route number or tram stop location (if waiting). Home stations give their suburb. No serial numbers are required.

Eyeball contacts: Stations in Sections A and C may claim extra points for 'eyeball contacts'. An eyeball contact is defined as one where participants can shake hands with one another on a train, tram, railway station or tram stop.

Prearrangement of eyeball contacts before the contest start time is **not** allowed. However, eyeball contacts may be arranged during the contest period on two metres or seventy centimetres FM only. Unlike with radio contacts, entrants cannot claim extra points for repeat eyeball contacts with the same person. Amateurs or SWLs not active in the contest cannot be claimed as eyeball contacts.

Scoring: Score 1 point per station worked (or heard) on each band. Total score is the number of radio contacts made (or stations heard) plus the number of valid eyeball contacts made.

Logs: Logs should show time, frequency, callsign and exchanges for each contact. Eyeball contacts should also be logged. Train or tram mobile entrants should staple their used Met ticket to their log. Where this is not practical (eg ticket remains current after the contest), a signed photocopy of the ticket will be accepted in lieu.

Logs should be posted to *Radio on Rails*, MDRC, PO Box 58, Highett, Vic, 3190. Logs should be received by 31 October, 1999.

Certificates: These will be awarded to the first three placegetters in each section. Other entrants will receive participation certificates.

Results: Results will be announced in the WIA's *Amateur Radio* magazine and on the MDRC's weekly news transmission (8pm Wednesdays, 146.550 MHz).

ar

Radio Amateurs Old Timers Club of S.A.

The Annual luncheon will be held on Thursday 28th October 1999 (11.30 for 12 noon luncheon) at the Airport Club, James Schofield Drive, Adelaide Airport. RSVP to one of the following before Friday 22nd October 1999 for catering purposes.

Pres. Jack Townsend (VK5HT) 82952209

Sec. Ray Deane (VK5RK) 82715401

A/Sec. Lew Schaumloffal (VK5AKQ) 82630882

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ALARA

Christine Taylor VK5CTY
ALARA Publicity Officer
16 Fairmont Avenue
Black Forest 5035
geencee@picknowl.com.au

Celebrating ALARA's Birthday

July is the anniversary month for ALARA so there are special luncheons to celebrate the occasion.

In VK3 this year there were six members gathered to wish each other "Happy Birthday ALARA".

Bron VK3DYF, Gwen VK3DLY and Jean Shaw were pleased to have Mavis VK3KS, absent for the last couple of months, Elizabeth VK3NEP and Robyn VK3WX. Robyn brought along a couple of exquisite, tiny teddy bears she had made.

Elizabeth has recently had a visit from Judith ZL1JDL whom she sponsors into ALARA. Judith drove out to Elizabeth's QTH in the beautiful outer suburbs of Melbourne to spend the day as part of her time in Victoria. It is always a special occasion to meet someone you sponsor, whether it is for the first time or for the nth time.

In Adelaide the Birthday luncheon was at a new venue. There were 10 YLs this year and as the OMs of some of the ladies also celebrated the day, this year they had a table for 8 nearby.

Jean VK5TSX, Meg VK5YG, Tina VK5TMC, Myrna VK5YW, Janet VK5NEX, Denise VK5YL and Christine VK5CTY, who are regulars at the birthday lunches, were joined by Maria VK5BMT, now spending her winters in Adelaide. New-comers, Jeanne VK5HOX and Colleen were both there for the first time. Greetings but apologies were passed on from Lorraine VK5LM, Mary VK5AMD, Joan VK5BYL and Marilyn VK3DMS (sent an invitation as a 'nearly' VK5) and from Lyndall VK5KLO heard on the air as others were driving to the lunch.

We hear that Lorraine is the regular newspaper photographer for her local paper. Janet was in a group of SES members commissioning a new truck when she discovered Lorraine there to record the occasion.

In Perth the birthday was celebrated in June, as that is the month in which the VK6 lunches have their anniversary. This year it was their 20th birthday and ALARA'S 24th!

Birthday Get-Together on Air

On the fourth Saturday of July a special 80 metre net is run to recognise the birthday, as well. Sometimes people have to be reminded by a phone call (I hide my head in shame) and sometimes we remember ourselves. This year the net was started by Bron VK3DYF and Gwen VK3DYL. They were joined by Pat VK3OZ and Meg VK5YG and later by Christine VK5CTY and Dot VK2DB. Dot had just served what sounded like a particularly delicious Chicken Tandoori when she remembered, so she made everyone hungry by eating it at the microphone. Then Poppy VK6YF came in as well to make the group cover nearly the whole of the country.

As usually happens on Australia wide nets, variations in the weather were experienced in different parts of the country. Whenever one part has too much rain another part is badly in need of it. Dot has had far too much rain this year while Poppy and the VK5s would like some more for the farmers.

The Norma Souper Contest

In April each year this 80-metre contest is run for ZL and VK YLs. This year Gwen VK3DYL won the VK section. She complained that she didn't have enough competition, so why not make her work a little harder for the honour, next year. Read the newsletter or this column for details and set the time aside.

Visitors

Elwyn VK2DLT touring VK6 has been in to see Bev VK6DE in Geralton and will call in on Poppy VK6YF on her return to Perth.

Dot VK2DB had some interesting visitors from the US recently. Warren WB6TMY, with wife Barbara and daughter Nikki 'found' Dot 'on the Web'. Dot was delighted to have the opportunity to show Warren and family a very special family. He wanted to see an Australian ham shack. In Dot's household there are three 'hams' and three 'ham shacks'. It was a thoroughly enjoyable visit for all concerned.

The First Clara YL Conference

For the first time CLARA, the Canadian YL group ran a conference, this year, organised by Elizabeth VE7TLK. It was held in North Vancouver on May 1st 1999 and attended by 24 YLs. They hope this will be the first of a number of conferences and get-togethers that will encourage YL participation on amateur radio and to give CLARA a more visible presence in the amateur community. We wish them well.

Reminders ALARAMEET in 1999

It is not too late to decide to join others in Brisbane for the ALARAMEET over the long weekend at the beginning of October. Contact Bev VK4NBC QTHR the callbook with your registration.

If you are coming to ALARAMEET don't forget to bring along a photograph of your pet(s) for a guessing competition and some craft items to show others.

There will be an informal evening meal for those there on Friday night but activities really start on Saturday morning. All the details are on the form Bev will send back to you when you contact her.

At the last count there were over 70 expected including a number from ZL land.

International YL2000

Due to be held in Hamilton on 30th Sept/1st Oct 2000. Expressions of interest have been received from a number of DX countries but the final registration date is not till March 2000, with payment due by June 30th 2000, so there is still some time to save the pennies.

continues next page

ALARA

Contact Biny ZL2AZY,
550 Kane Street,
Pirongia 2450.
NEW ZEALAND
or by email :- yl2000@iname.com

International Lighthouse/Lightship Weekend

This could be an interesting radio activity to listen for over the weekend of Aug 21st/22nd. It runs from 0001UTC on the Saturday to 2359UTC on the Sunday. As over 126 stations have confirmed their participation there could be some rare DX calls among them.

There is more information available on:-
http://www.waterw.com/~weidner/ld.htm

If you wish to add your callsign and details to the list contact Mike GM4SUC on GM4SUC@compuserve.com

New Callsign

During the week after the Birthday luncheon Jeanne VK5HOX heard that she had passed her 10wpm. She is now VK5JQ. Congratulations.

ar

OVER TO YOU

Band Plans

With reference to the letter "Band Plans" by Brian Welley VK2ZW (AR July 99). Perhaps in some ways Band Planning has outlived its usefulness. What could be the quickest way for the Amateurs to lose bands or band space is not to make maximum use of these bands. Why allot exclusive use of parts of Amateur bands to CW for example, when this group seem to use any part of the band other than their exclusive allocation? Remember that there are many other interests like commercial, pastoral, private, sporting and travel groups who are out for more of the Radio Frequency spectrum. Remember that we have a government that seems to want to flog off everything to the highest bidder. As for CW, I for one would hate to see this dropped, however the Morse requirement could, and perhaps should, be dropped for frequencies above 25 MHz. After all, this requirement has been dropped for others.

Graham J Muirhead VK4WEM
23 Cunningham Street
Warwick Qld 4370

Morse Not Dead

Re article "The passing of an old friend" AR July 1999 submitted by VK6YN Sam Wright.

SOS is alive and well in the UK and China, perhaps not for the purpose designed for, but for the bringing of assistance along the highways.

The enclosed photocopy was taken on A65 in Yorkshire. The boxes are painted orange with a large SOS on each side. They are dotted along the road.

Similary out of Shanghai, similar boxes exist painted blue with large SOS in white.

D Reynolds VK2ANW
9 Arterial Road
Killara 2071 NSW

Is this magazine borrowed?
Join the WIA
and get your own each month! Amateur Radio

The Snags of Fishing from High Rise Buildings

Peter VK3YEs article in June 99 AR on Amateur Radio from tall buildings brought back memories of this some 20 years ago.

My late wife had friends who lived in VK3 in the big Housing Commission Flats on Park St overlooking Albert Park Lake. They lived on one of the uppermost floors.

On one of our campervan tours of Victoria we were invited to stay a few days with them, rather than stay in a caravan park. We accepted the invitation and I thought what a marvellous location for Amateur Radio, HF and VHF.

As I had the FT-7 in the camper and a TS-2200 2M portable I decided to take them up there. 2M FM was marvellous. Stand the transceiver on the window sill and work simplex or repeaters miles away. Connect up the little portable 3-element beam tied to a broomstick in turn lashed to a chair and you worked anywhere.

HF was even better, even with only 10 watts. QRP was good in regards TVI! It was HF and on 7 MHz where I had the amusing incident.

I used to set up the FT-7 along with an ATU by the window. You could not open the windows any more than about 6 inches. This was to stop any one from jumping out! I had about 65 feet of hookup wire. Attached to one end was a small pyramid shaped fishing sinker. Leaving myself 6 feet free, a half hitch was made around the free end of a broom handle. The antenna with weight supported in the broom handle was then poked out the window allowing the wire to hang free some distance out from the building. Closing the window supported the broom and the broom head prevented the lot going out the window. An earth wire was connected to the aluminium window frame with a big battery clip. All connected up to the FT-7/ATU it loaded up well on 7070 kHz.

A sked had been arranged back to VK5 for about 4 o'clock of an afternoon. These went well, 5-8-9 signals both ways even with only 10 watts.

These skeds went on for several days, then one day, during a QSO "BING" the broom nearly went out the window! The broom and antenna was quickly hauled back inside. There was only about 30 feet of antenna wire and NO weight! I quickly poked the remainder of the antenna out the window again and informed the VK5 I had to close down.

We all thought it was a great joke and expected a knock on the door with somebody asking "Who was trying to catch fish out the window?" No one came. I had to go out and buy another fishing sinker. Luckily I had enough wire for another antenna.

I moved the station to the laundry where there was a better earth and 240 AC and nobody to disturb for my sked next day. I explained the goings on to the VK5 with much amusement.

I never caught any more "Radio Fish"! Not such a bad "tail"! (The one that got away?)

S J Mahony
19 Kentish Road
Elizabeth Downs, SA 5113

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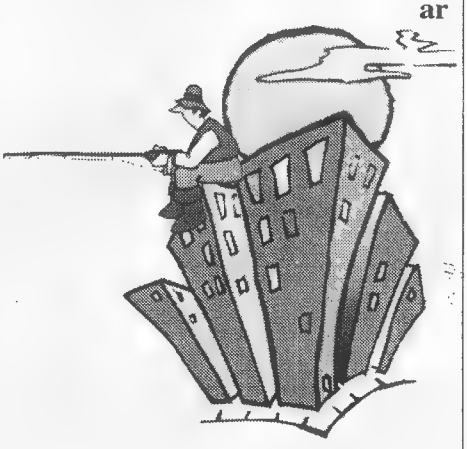


PIONEER OF THE STORY OF RADIO
GUGLIELMO MARCONI

by Wolf Harranth OE1WHC
Translated from the German by Ken Matchett VK3TL Hon. Curator of the WIA QSL Collection

"A certain Signor Marconi from Italy stubbornly maintains to have discovered a wire-less telegraph, by means of which it is possible to carry the human voice over large distances. We are not able to say that this is simply a foolish joke or that this gentleman is a straight out swindler. One thing however is certain: his doubtful discovery will not survive this winter."
(The Morning Post, August 1896)

Born on 25 April 1874 in Bologna, in his parents' home, the Palazzo Marescalchi, Guglielmo Marconi was the third son of Annie Marconi, nee Jameson, half Scot, half Irish, and Giuseppe Marconi, an Italian businessman of considerable wealth. He spent his childhood summers at the Palazzo and in winter, on the family estate, the Villa Griffone, Pontecchio near Bologna, interrupted only by a short period in England between his fourth and seventh years.

His father sent his fourteen-year-old to the Cavallero Institute, where he studied physics and chemistry with particular enthusiasm. One year later he attended the technical institution in Livorno, where Marconi's interest in electricity and its related studies developed. He undertook private tuition under the greatest authority in the land, Professor Rosa of Bologna.

During the year 1894 Marconi, now 20 years of age, spent his holidays in the Biellese Mountains of the Italian Alps with his two elder brothers, Giuseppe and Luigi.

"And there (he wrote in his memoirs) in a modest hotel room in the dawn light of a sleepless night, the hitherto unrealised ideas of my life's goal took shape. All at once I guessed - no - ***I knew*** that it must be possible to send an electrical signal through the ether from one place to another. And in the still of the night I thought of Hertz and his experiments. In the morning my ideas, conceived that night, grew ever stronger and I felt more and more that wireless telegraphy was indeed possible and had ceased to be just an inventor's dream."

The German physicist Heinrich Hertz had, some years before, determined experimentally that electromagnetic waves obeyed the same laws as light waves, in particular, that they radiated straight out from their origin at the speed of light. It was this fact that confirmed the previously enunciated theory of electromagnetism of James Clerk Maxwell.

On this basis Marconi was to develop his ideas. In the autumn, after having returned to the Villa Griffone, he requested two large rooms for his research. There he worked day and night, lovingly encouraged by his mother but sceptically regarded by his commercially-minded father, who parted reluctantly with the much-needed money for his son's experiments.

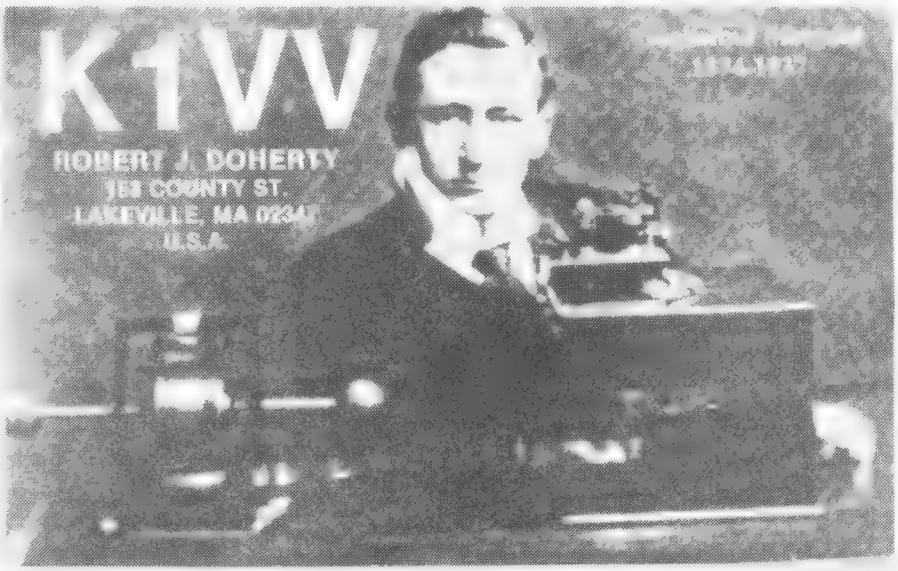
In order to discover the waves emitted from an oscillator, Heinrich Hertz had used a metal ring that was very slightly open at one point. When an electrical current was passed through the ring tiny sparks criss-crossed the gap. Marconi recalled much later:

"It seemed unreservedly possible to send signals through the ether, and even over great distances if it were only possible to increase and to regulate the intensity of the spark emission. This concept seemed so clear and logical to me that I was at a loss to understand how no-one had previously thought about it - and it appeared inconceivable to me that my theory seemed just a fantasy to others."

Autumn having come and gone, the first real progress with his primitive apparatus could be seen.

"A problem always seems so simple when one has found the answer. To generate the spark was not easy, but in December 1895 my first success was realised. I divided the transmission into a series of short and long phases and thus was able to send Morse characters."

Although the winter was particularly harsh, Marconi's mother decided to remain at the Villa Griffone so that her young son could carry on with his research. The first of the transmissions reached only across the attic, but in the early part of 1896 a distance of two miles was achieved. Shortly after this, Marconi was obliged to travel to London with his mother, but he took his equipment with him. William Preece the Post Office chief engineer, had already



K1VV: Many radio amateurs, including this one from the USA have depicted Marconi on their QSL cards. Several QSL's have celebrated the anniversary of Marconi's successful wireless transmissions

heard of the young Italian and had arranged Marconi's first public demonstration - the wireless transmission from the Central Post Office in St Martin-le-Grand to a receiving station on the banks of the Thames.

Now engineers of both Army and Navy were to take heed of his discovery. On Salisbury Plain Marconi transmitted morse signals over the then incredible distance of eight miles. Preece had assigned an assistant to Marconi, James Steven Kemp, who until his death in 1932 was to remain a true and valuable helper.

The next experiments took place over water, across the Bristol Channel from Penarth to Bream Down. The Kaiser himself had sent an expert, Professor Slaby from Berlin, as a witness to the experiments. In 1896 Marconi took out his first patent, and a year later founded the Wireless Telegraph and Signal Company, so putting his achievements to practical use.

Now the financial benefits really started to flow. Marconi was no longer dependent upon the financial assistance of a rich father and henceforth his distinctive natural ability had the effect of combining a scientific curiosity with commercial ambition.

At the end of 1897 research into the wireless telegraph had been completed and a regular commercial operation could start.

Marconi had not found the support he hoped for in Italy, but in England this was in fact forthcoming. One by one the first Marconi stations were established: Alum Bay on the Isle of Wight, Bournemouth and Poole. Installation of Marconi transmitters in Irish lighthouses quickly followed.

Marconi had been obliged to forgo his military service, but now the 23 year-old was appointed as Naval Attache to the Italian Embassy in London. He could now continue with his experimentation.

Marconi had always shown himself to have an eye for publicity. When the Prince of Wales, (later King Edward VII), became ill on board the yacht *Osborne*, Marconi set up radio communication between the ship and Queen Victoria in Osborne House. Newspapers went overboard with their reports of the incident.

On 3rd March 1899 a human life had been saved thanks to the wireless telegraph as a ship ran aground! During naval manoeuvres in 1899 a distance of 79 miles had been breached by wireless, and in March 1899 the first telegram was sent between Boulogne and Dover over the English Channel:

"Professor Fleming, London. I am pleased to send you greetings through the ether by means of electric waves from Boulogne to South Foreland and from there via postal telegram. Marconi."

Professor J A Fleming was Marconi's closest adviser. It was he who later discovered the diode valve.

The young Italian inventor in the meantime enjoyed world fame. His business enterprises returned massive dividends.

Now a new and most ambitious aim presented itself... the bridging of the Atlantic. The basis for this undertaking, again typically Marconi, was not only the scientific challenge involved but:

"I am convinced that it is more profitable to send news items to America at the rate of sixpence per word than to send them across the channel for a halfpenny a word!"

For the European transmitting station a suitable location was found at Poldhu Point, the furthest point in south-west England. In January 1901 this station was completed and in Canada on Signal Hill in St John, Newfoundland, the complementary station was established.

On 6 December Marconi arrived there with his co-workers Kemp and Paget. He had brought with him balloons and six kites, the function of which was to support the 185 metre long antenna wires. On 12 December 1901 all was ready. Marconi had left prior instructions in Poldhu for the transmissions to be sent each day between the hours of 12 noon and 3 pm Canadian time.

"Despite a nagging hunger nobody could eat a thing. Each of us had eyes only for the clock, which became the focal point of the room. Time: 12.20 - how long will it go on? Would we be able to hear at all a signal from over there? Suddenly, at 12.30, I heard a series of crackling noises in the receiver. The letter S! Poldhu to Canada!! We had previously chosen the three dots of the letter S in order not to tax the transmitter by sending dashes in morse. The Atlantic Ocean had been conquered; the electric waves had covered a distance of 1700 miles!"

Now thought could be given to the construction of a large radio station in Canada. This was located at Glace Bay on the coast of Cape Breton.

On 1 November 1902 the experiments there began. At the beginning of December the first two words sent, Greentime and Yellowtime, were quite clear to the ear. On 21 December 1902 the first telegrams were sent from Glace Bay to the King of England and the King of Italy.

In 1915 Marconi began experimenting with the first radio-telephone, signals covering a distance of 30 miles. October 1919 saw the amalgamation of earlier companies in the USA into the Radio Corporation of America, the RCA. In the same year Marconi acquired a large ship, the snow-white yacht *Elettra* which originally had been built for the Grand Duchess Maria Theresa of Austria. This was to become from now on the real home for Marconi and his family. In 1905 he had married Beatrice O'Brien, the daughter of Lord and Lady Inchiquin, from which marriage ensued three children, Degna, Giulio and Gioia. One small setback: the couple were divorced in 1924, and in 1927 Marconi married Maria Christina Bezzi-Scali, the daughter of a high-ranking Vatican official. From this marriage was born a daughter, Maria Elettra Elena Anna.

Marconi quickly involved himself with radio broadcasting, utilising his customary

VA1S
CAPE BRETON ISLAND, NOVA SCOTIA, CANADA
IOTA NA-010 CQ ZONE 5 ITU ZONE 9 Cdn IOTA NS-01
Operators: Jack, VE1XT (SSB) Phil, VE1BVD (SSB) Al, VE1AL (CW/SSB &QSL Mgr)
Photo. Marconi Towers & station at Table Head, Glace Bay, Nova Scotia (circa 1903)

VA1S: This QSL from Nova Scotia shows the transmitting towers at Glace Bay from which Marconi made the first successful trans-Atlantic wireless transmission on 15 Dec 1902.

business instinct. In 1920 on board the yacht *Elettra* people were dancing to music that was being transmitted from London. A newly established Marconi firm now was building broadcasting transmitters and receivers. In February 1922 the first commercial broadcasting station in England began transmission under the station call-sign 2MT, and in May of the same year followed station 2LO transmitting from Marconi House in London. On 14 November 1922 the BBC was founded.

In 1923 Marconi began experimenting with short wave using a transmitting power of 12 kilowatts and a wavelength of 92 metres. In 1932 he established microwave communication between the Vatican and the summer residence of the Pope. The year 1934 saw his experimentation with ultra high power transmissions using a wavelength of 57 cm. In 1935 Marconi demonstrated the principle of radar but showed no particular interest in television. The Marconi EMI system developed by his assistants was, however, used by the BBC in 1936 for the first regular TV service in the world.

There had been no lack of honours bestowed upon him. In 1901 he had shared the Nobel Prize for physics with the German Ferdinand Braun, and at the beginning of the First World War Marconi had been elected to the Italian Senate. There followed countless orders, honorary doctorates and memberships of academic institutions in every country of the world. In June 1929 Marconi was elevated to the nobility, being given the title of marquis. Now he could busy himself in politics at the highest level. In 1928 he gained membership of the highest order of the Italian Fascist Party.

Despite his visibly poor state of health, brought about by sheer exhaustion, Marconi nevertheless undertook a world cruise. In December 1935 he returned to Rome, from which he would no longer venture. After several ongoing heart attacks Marconi passed away on 20 July 1937. His last resting place was the same as that where he had passed his childhood. He was buried in the mausoleum set in the garden of the Villa Griffone.

The news of his death spread like wildfire throughout the world - over every medium of communication, media which Marconi himself had so decisively created. As a mark of respect for Guglielmo Marconi every telegraph and broadcast station throughout the world ceased transmission for two minutes. For those two minutes the ether was as quiet as it ever had been in a time before Marconi.

Translator's Note:

The above text originally appeared in the magazine ***Amateurfunk*** under the title *Pionier der Funkgeschichte -Guglielmo Marconi* and was written by Wolf Harranth OE1WHC, curator of the prestigious Austrian QSL Collection.

The National QSL Collection of the WIA has received considerable assistance from the Austrian QSL Collection, information and exchange of QSLs having taken place on a regular basis over several years. Permission to translate and publish this article in Amateur Radio was kindly given to Ken by the author.

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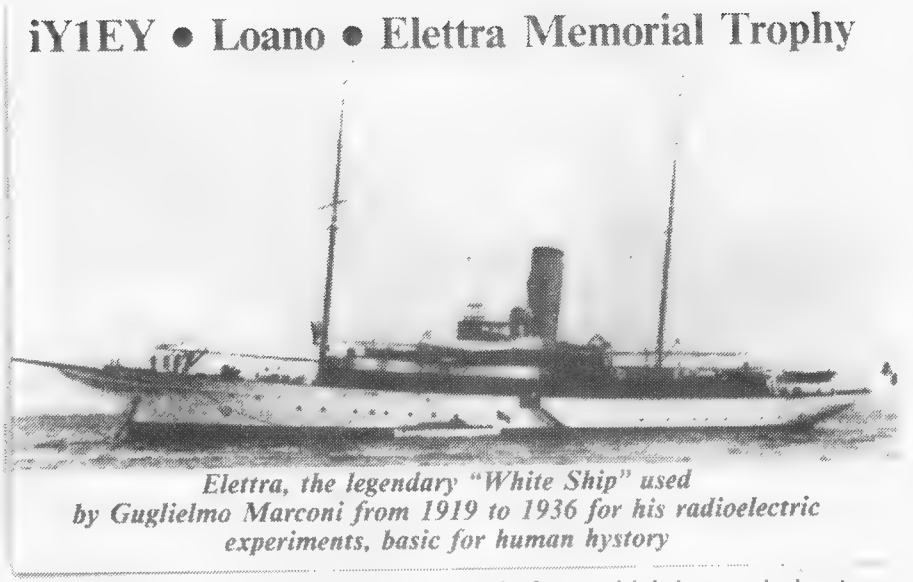
iY1EY • Loano • Elettra Memorial Trophy
Elettra, the legendary "White Ship" used
by Guglielmo Marconi from 1919 to 1936 for his radioelectric
experiments, basic for human hystory

iY1EY: *Elettra* was Marconi's luxury yacht from which he carried out wireless research from 1919 to 1936. This QSL was sent from a special amateur radio station in Loana near the shore of the Ligurian sea, *Elettra's* home waters.

GB100SFL: On 19 December 1898 Guglielmo Marconi and Kemp carried out radio experiments from the East Goodwin Lightship in the English Channel. 100 years later radio amateurs celebrated the event by again transmitting from the lightship to a receiving station on the South Foreland Lighthouse, from which this QSL was sent.

i2DMK/iY1TTM: This portable station operated from the Torre Marconi (Marconi's Tower) in Sestri Levant Italy. Marconi conducted experiments from this tower using microwaves with a wavelength of 63 centimetres.

... and in Marconi's own words

How I thought of Wireless Telegraphy

By Guglielmo Marconi

THE IDEA of transmitting messages through space by means of etheric waves, otherwise wireless telegraphy, came to me in the spring of 1894, while reading an account in an Italian electrical journal of the work of Professor Hertz, who had died in January of that year. I had followed Hertz's experiments for several years previous to that, but they had never before awakened in me more than a passing interest.

For detecting the waves radiated from the transmitting oscillator Hertz had used a metal hoop having a small gap at one side. Upon bringing this hoop within the influence of the electrical disturbance set up by his oscillator, he discovered that minute sparks passed across the gap.

In other words, he showed that electric waves, when radiated into space, could be detected at a distance by means of the metal hoop. It occurred to me that if I could interrupt the wave transmission from the oscillator, breaking it up into long and short periods, similar interruptions would be detected in the spark gap of the metal hoop.

Here, in short, was the possibility of signalling across space by means of the Hertzian waves. A short emission of the transmitted waves would signify the dot of the Morse alphabet, a long emission the dash, and thus words might be spelled out in the distant receiver.

The idea seemed so simple and evident to me that at first I had no thought of attempting practical experiments to demonstrate its possibility, because I knew there were many clever men in the world experimenting with etheric waves, and I thought someone would quickly work out the problem. After waiting almost a year without seeing any account of attempted applications of the discoveries of Hertz to the transmission of signals, I began my first experiments in December, 1894, and obtained results which surprised me, and which I at once realised were new.

I may say that for several years previous to the beginning of this work I had been deeply interested in electricity, though purely as an amateur. I had fitted up a rude laboratory or workshop in my father's house near Boulogne, where I had began to work with primary batteries and thermopiles, grappling with the problem which has puzzled so many inventors -a method of transforming heat directly into electricity. I had also experimented with the utilisation of steam in engines, and had likewise been deeply interested in chemistry.

I have seen it stated that Professor Righi, of the University of Boulogne, first suggested to me the idea of communicating messages through space. This, however, is not the truth. I never even attended any of Professor Righi's lectures-I wish now I had though I did have discussions with him, as beginner with master, on the subjects of chemistry and mechanism. He had repeated very successfully the experiments of Hertz, detecting transmitted waves a short distance across a room -but he evidently had not thought of using the waves for the communication of intelligence, for when I first mentioned the idea to him he said he thought it would not be practicable. I think I am right in saying that previous to my experiments no one had attempted the practical use of the Hertzian waves for telegraphy.

I do not think it occurred to other experimenters that these rays could be so utilised, although Professor Oliver Lodge, who had long been experimenting along the lines suggested by Hertz, gave, in a book which he published in 1894, a number of suggestions as to the uses to which these rays might he put, but never mentioned their application to telegraphy. He suggested that if one should put iron filings in his eye he might see the hertzian waves; but he did not suggest that these rays could be used for signalling.

One English electrical journal in its issue of September 17th, 1897, said that Dr. Lodge's apparatus for thus utilising the Hertzian waves was shown in Oxford in 1894, but I fear that this statement is not quite correct. Either public interest was very low at that time, or the exhibition was very little noticed, because no written report of such an exhibition was made, and I have the word of Professor Fleming of University College, London, who was present at the meeting in question, that to his knowledge no suggestion was made to the effect that the Hertzian waves could be used, for the purpose of signalling over long distances.

Indeed, when I began to utilise Hertzian waves for telegraphy I did not know that anyone else had ever thought of such a thing. I learned later, however, that many experimenters had been close to the idea, and had even suggested it. One writer in an English electrical journal in April, 1891, said : -

" If we could reduce the frequency about 2,000 times, and produce vibrations of about 2oo,ooo millions per second, we should get waves of about one millimetre long. These radiations would probably pierce not only a fog but a brick wall. When we get such vibrations there will be many interesting uses for them. One, at all events, will be the possibility of communicating between lightships and the shore."

The Hertzian wave was experimented with and its identity with light waves was often demonstrated, but no one used it for telegraphic purposes before I began my experiments. I believe I am right also in saying that I sent the first recorded message through space by electro-magnetic waves in 1894, and was the first to telegraph from a ship in motion (Italian Navy, 1897).

In my apparatus I have made use of known ideas. My instruments are improvements of my predecessors', with the introduction of a few developments which from my observation seemed necessary. It is only fair to say that the introduction of these new elements was the basis of my long distance success. It is the business of science to acquire results with the least possible outlay of work and time, and results are regarded as the standards by which a man's work is judged.

page 7

***"London Magazine"* March 1902**

Honour in memory of Radio Pioneer

R C Tulloch VK4BF
3 Andrews Court, Kirwan Qld 4817

Recently the Charters Towers City Council resolved to honour the memory of the late Vern Kerr (VK4LK) who had been associated with the work of the Royal Flying Doctors Service (R.F.D.S.) for more than 40 years.

During this period, between 1952-1973, he was in charge of the Base in Charters Towers, including in his duties the work of The School of the Air, now known as The School of Distance Education.

The Charters Towers Base was situated on the outskirts of town, at 22 Dalrymple Road, leading to one of the main highways to the north and northwest.

Charters Towers is a bustling small city situated in North Queensland 133 kilometres south west of Townsville and on the junction of the Flinders Highway leading west to Mount Isa and beyond, the Gregory Highway to the south and the Lynd Highway to the north and north west.

Charters Towers serves a vast pastoral area, but is probably better known for its association with gold mining, from early this century to the present day.

Vern was born in Longreach in 1912 and on leaving school accepted an Electrical Apprenticeship in Winton. During this time he became very interested in the new innovation of radio. In 1932 he gained his Amateur Radio Licence, an active interest he held for all his life.

As a result of his interest in radio communication, the Reverend John Flynn approached Vern and his parents to see if he would join the newly established Aerial Medical Service to act as an Assistant to the Radio Operator, the late Maurie Anderson, at Cloncurry. In 1934 Vern joined this service, operated by the Australian Inland Mission – later to become the Royal Flying Doctor Service.

Vern obtained his COCP (Commercial Operators Certificate of Proficiency) in Cloncurry in 1941 and assumed control of the base there until moving to Charters Towers in 1952.

The Charters Towers Base operated from 1952-1973 and when it closed, Vern was transferred to Charleville Base where he remained until his retirement in 1977, returning to live in Charters Towers.

During his period with the R.F.D.S. from 1934-1977 it has been said that his voice would have been one of the best known in Queensland, particularly in the rural area. He became a byword for the assistance he gave to those living in these vast areas and for his devotion to duty.

During his service, he kept abreast of modern technology as it was developed and saw equipment change from the old typewriter Morse senders, through the famous pedal radio series to the modern solid state transceivers.

In his continuing amateur radio activities he was always enthusiastic. His operating technique on CW and phone was friendly and courteous. He was a source of encouragement to the new licensees and held regular "skeds" with various friends and groups all over the country until just before his passing on 9th September 1979.

His radio operation and technique resulted in him being awarded Life Membership of the Society of Wireless Pioneers (USA). This honour has been granted to only two other Australians.

He was a strong member of the WIA for many years.

So, it comes as no surprise that the Charters Towers City Council decided that some honour to the memory of this man who gave so much service to others should be forthcoming.

It was decided that a portion of Dalrymple Road adjacent to the old Charters Towers Royal Flying Doctors Base should be renamed "Vern Kerr Drive" and a memorial plaque at each end of this section should be erected.

The Charters Towers City Council erected the plaques and dedicated them on 19th August 1998. The cover of AR this month features a photo of Mrs Joy Kerr, wife of the late Vern Kerr, standing beside one of the two plaques.

A brief dedication service was held at the site, attended by Mrs Kerr, relatives, friends and ex-staff who worked with Vern at the base.

So if you live around Charters Towers, are stopping there a while or just passing through, drop by Vern Kerr Drive and recognise the tremendous value in taking Amateur Radio seriously. Thank you Charters Towers and thank you Vern. 73om.

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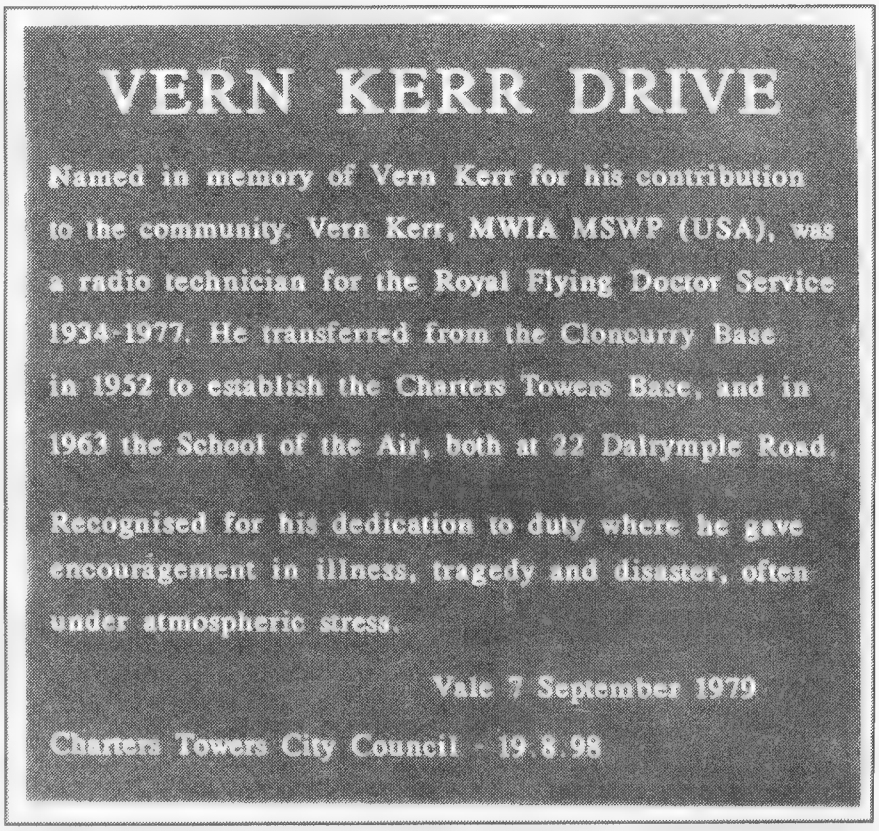
VERN KERR DRIVE
Named in memory of Vern Kerr for his contribution to the community. Vern Kerr, MWIA MSWP (USA), was a radio technician for the Royal Flying Doctor Service 1934-1977. He transferred from the Cloncurry Base in 1952 to establish the Charters Towers Base, and in 1963 the School of the Air, both at 22 Dalrymple Road.
Recognised for his dedication to duty where he gave encouragement in illness, tragedy and disaster, often under atmospheric stress.
Vale 7 September 1979
Charters Towers City Council - 19.8.98

Amateur Television For JOTA

By Barry Cleworth VK5BQ
PO Box 176 Stansbury SA 5582

There is little doubt that among the many modes of transmission available to radio amateurs, television has the potential to capture and maintain the interest of JOTA participants. This is particularly so when a full duplex system is employed, enabling Guides and Scouts at both ends of the link to see and hear each other simultaneously.

The Links

Following our previous year's example, David VK5KK and I set up a wide band FM ATV link, using frequencies on the 1.2GHz and 2.4GHz UHF bands, between my QTH at Stansbury on Yorke Peninsula, and the SA VHF Group headquarters at the Elizabeth water tower. A back up link was also established at David's QTH, where his superior elevation of 185 metres ASL provided continuously reliable results.

Although the path length to VK5KK exceeded 80 kilometres, P5 pictures were achieved for most of the time. The option to establish links between Guide/Scout halls was not considered, due mainly to anticipated propagation problems presented by their locations.

However a link between VK5BQ at Stansbury and Lee VK5YLE at Greenacres made possible a relay on 426.25MHz to the O'Halloran Hill AM ATV repeater. VK5RTV viewers across Adelaide were able to see some of the JOTA activity on the repeater's normal output frequency of 576MHz (Channel 35).

This output frequency being on a public broadcast channel provided a window for the general public to view JOTA activity. Reports of signal quality by some of the viewers were most favourable.

An engineering channel was also established on 70cm to provide liaison between the 'technical directors', Barry VK5BQ and David VK5KK.

The ATV Studio

Since the radio shack at VK5BQ is only a converted fourth bedroom in the house with quite restricted floor space, it was again decided to set up the lounge room as the

Photo 1. The Guide assembly being briefed before operations began. Note the use of reflected lighting to reduce eye strain.

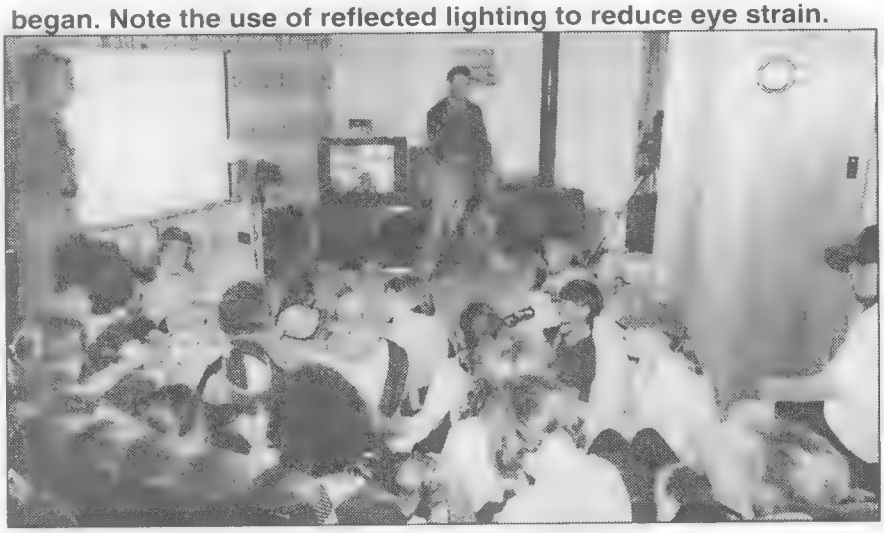

Photo 2. The full complement of guides in "Studio 1" at VK5BQ, with Peter operating the camera.

Photo 3. A junior Guide talking via 1250MHz to a Scout at the water tower whilst watching him on the return 2439MHz link.

Photo 4. A general view of the antenna systems used at VK5BQ. A HF Yagi, 2 parabolic dishes, 2.4GHz Loop Yagi and two 70cm Co-linear arrays.

Photo 5. The two home brew dishes at VK5BQ. The 2.1m dish used on 1250MHz and the 1.2m dish on 2439MHz.

JOTA studio, where the twenty young Girl Guides and their leaders could be more comfortably accommodated. However it became quickly apparent that the studio was just on the 'overload' point, confirming the author's view that small JOTA groups are to be preferred both for ease of accommodation, and behavioural controls.

In regard to the last subject I am aware that there are many amateurs who have withdrawn their assistance to JOTA through behavioural problems. However I could not have been more satisfied with the behaviour of my group, which included girls from Yorketown, Minlaton and surrounding areas.

Equipment Used

The girls watched their JOTA counterparts on a 63cm receive monitor with audio and video inputs from the 2.4GHz receiver in the shack via shielded tie lines, under the floor. The 2.4GHz transmissions from the water tower emanated from a 25W transmitter and slot antenna. The backup signal from VK5KK radiated from a parabolic dish fed from a 5-watt transmitter.

In the studio at VK5BQ, two cameras were initially employed, utilising a video switcher routed to the shack (transmitter room). However one camera was retired due to malfunction.

Audio via two microphones was fed through an audio mixer prior to being routed to the transmitter.

Two 34-cm monitors were deployed in the studio for monitoring camera output, and final program 'line' output, prior to being applied to the transmitter.

The transmitter was fully home constructed from kits available in VK5, was set up for about 19 watts output, and fed via LD4-50 heliax cable to a fully home constructed 2.1 metre parabolic dish. The output frequency of 1250MHz is an accepted simplex channel regularly used by up to about ten amateur stations in VK5.

Received signals on 2.4 GHz returned via a 1.2 metre dish also fully home-constructed. As most ATVers will be aware, activity on amateur television still remains within the realm of the equipment 'home brewer'. In fact, the only commercially manufactured equipment used for this event at VK5BQ were the camera and monitors, and of course the 70cm liaison transceiver.

Another small piece of equipment used was the vision distribution amplifier, (VDA) or video splitter if you like. These devices are used to obtain several video signals at 1Vp-p, from the one source. In our case it was required simultaneously to record both incoming and outgoing program, necessitating multiple video and audio outputs.

Two other monitors were also fed from one of these VDA's as it was required to monitor the off-air signal and the incoming received signals.

Lighting in the ATV studio is not something to be overlooked and after some experimentation, a big improvement over last year's effort was realised. Fluorescent tubes were tried but abandoned in favour of incandescent lighting with daylight deliberately excluded, as a mixture of two lighting sources with differing colour temperatures is rarely satisfactory. The improved lighting, coupled with the excellent smooth camera work by my son Peter, drew several favourable comments from various viewers some of whom were not involved in JOTA.

Problems Encountered

Few technical problems became apparent, despite the very hot and windy weather on the Saturday and the resulting brief power outage, fortunately not requiring the generating set. Some SSB interference affecting the audio circuits at the water tower caused some concern, but was quickly dealt with by Dave VK5KK.

Interaction between transmitter and receiver was not a problem, no doubt due in part to the positioning of the parabolic dishes and, of course, their sharp radiation patterns.

Although propagation conditions were a bit variable on the hot and windy Saturday afternoon, a cool change going through the area brought improved signal stability on Saturday evening and Sunday morning.

Other Modes

At about 8PM on the Saturday evening the ATV gear was switched off to facilitate activity on the HF bands, but despite the 400 watts PEP on 20 metres fed to a 3 element triband beam, results were very disappointing. Quite a few contacts were made on 2 metre and 70 centimetre repeaters. Scouts and Guides at the water tower however were involved with JOTA contacts and HF.

Publicity for JOTA

A surprise event emerged this year in the form of a visit to the water tower by a team from a commercial television company based in Sydney. Four staff members including cameraman, sound technician and interview officer were very pleased to record a segment for the Channel Nine weekly children's program *"Squawk"*. They were quite impressed with our TV link for JOTA. Perhaps it should be put on record here, that although the media and professional TV stations regularly involve themselves in two way (duplex) TV links, often on a daily basis, it is probably quite rare among ATV operators, particularly over 80 kilometre paths.

In conclusion I would like to thank my two assistants, Gordon Welsh VK5KGS, and my son Peter, for their excellent help. Hopefully next year more ATV stations with very small groups of Guides or Scouts may become involved, using some of our ATV frequency allocations on the UHF and SHF bands, perhaps with duplex cross-linking. It is certainly a challenge and some planning by David VK5KK and others may already be in the pipeline.

ar

Photo 4. The twenty young Guides in attendance at VK5BQ at Stansbury.

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The End Of An Era

Christine Taylor VK5CTY

The following is not just a story about the great work done by a group of volunteers but should waken other groups to the possibilities in your area for establishing a permanent meeting place. Disused water towers also make good meeting venues and great VHF sites. What other clubs can boast their own venue and share what it took to get it?

On Tuesday 22nd June 1999 a particularly significant meeting of the WIA(SA Div) was held. It was a "wake". The last meeting of the Division in the Burley Griffin Building. Never again will we be able to say we are meeting in an incinerator!

For those of you who do not know the history of the Burley Griffin Building it may come as a surprise to hear that what was once a municipal garbage incinerator that was converted into our Headquarters building.

Geoff VK5TY told the story to those who had gathered to say "Goodbye" to an era.

Geoff had been involved in the search for a suitable building for the headquarters of the WIA(SA Div) back in the late 60's and early 70's. He was also deeply involved in the removal of the furnace and the beginning of the conversion of an incinerator into a meeting place.

The Burley Griffin Building was not the first site considered for a headquarters but it served the Division very well for over 20 years. For more details of the other options see "Amateur Radio" for November 1975.

That Walter Burley Griffin designed the city of Canberra is known to most of us. That he also designed and built several suburban developments in Sydney is less well known. He was a landscape architect from Chicago before he won the right to design the beautiful city of Canberra. On one of his trips back to the US he bought the agency for reverberatory furnaces to be used for the destruction of domestic waste.

At least five of these furnaces were built in the Eastern cities but only two in South Australia. (One is in Ipswich, Qld. Bob VK4KNH) The one used by the WIA still stands. It has a Heritage Rating and had this when the SA Div. took on the lease from the Thebarton Council, in 1972, in whose grounds the building stood.

We could do whatever we liked with the interior of the building, only the exterior had to be preserved. Anyone who has walked around the outside, particularly around the area furthest from the Road, will understand why this was important. It has some of the most beautiful masonry-work I have ever seen, and the random colouration of the red bricks is quite spectacular.

One of the features of the building that appealed to radio amateurs was the tall chimney. It was ideal for mounting aerials. However the chimney had its own surprise. The chimney was made square because that is aesthetically pleasing, but a square chimney does not draw well so inside the square chimney there is a round chimney to serve the incinerator! After all bricks were cheap in 1937!

When the SA Division chose it as their future headquarters it was still a municipal incinerator. It had outgrown its usefulness almost 20 years earlier because the amount of garbage had outgrown the original expectations of Walter Burley Griffin. It had been standing idle for some time and apart from the ramp that had carried the garbage trucks up from the road, it was untouched.

When it was in use the trucks backed up this ramp and emptied their load into a large hopper. From this hopper a sloping ramp fed the garbage into the massive furnace below, at intervals. The furnace occupied the entire ground floor (the room in which the wake was held). From the furnace

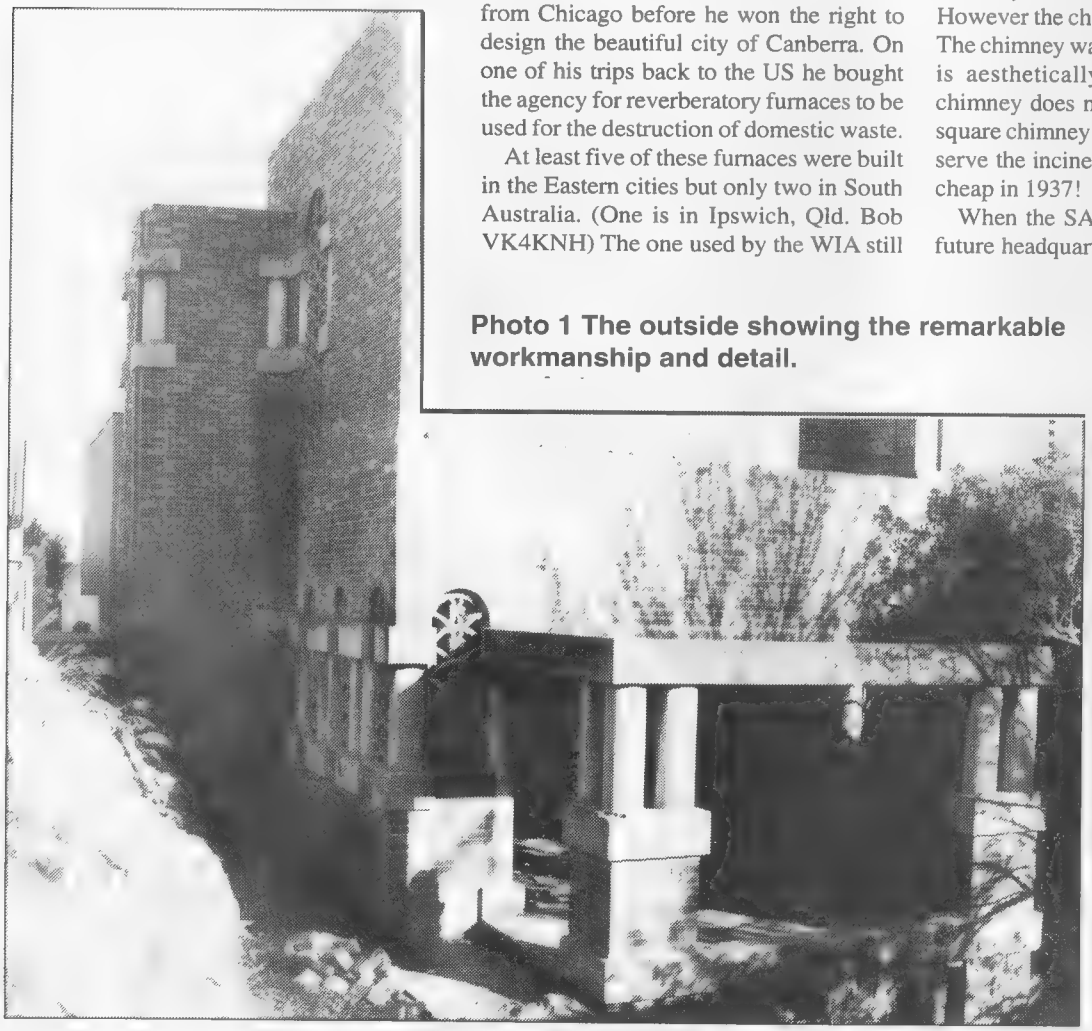

Photo 1 The outside showing the remarkable workmanship and detail.

there were a number of channels or flues that could be opened or closed for different purposes. The heat and the waste gas could be fed directly up the chimney, of course, or it could be used to preheat the garbage, or to apply heat to an asphalt cauldron in an annexe. Other channels fed in air under pressure to fan the flames in the oven - altogether, a complicated arrangement.

After the garbage was burned it was scraped out into a small railway type truck below the furnace and emptied into a pit behind the building.

Fortunately a plan of the original building (1937) was found, which was a great help to Geoff and his helpers as they set about their work of internal destruction. They had considerable difficulty sometimes in discovering how to get into or out of particular sections of the building, particularly into the chimney. They even found a room that did not appear anywhere on the plans!

Work started on the Sunday after Easter 1973 and the building was officially opened on April 4th 1977 though it had been in use for some time before that.

As can be imagined, everything was extremely dirty and full of odds and ends of junk, so the first task the workers faced was a basic clean-up once they had made the first survey of their property. However, the destruction of the actual incinerator oven occupied the workers for most of a year.

The furnace itself was a steel box 16ft by 12ft by 8ft high (5.3m by 4m by 2.6m) lined with firebricks. All the corners were reinforced with 3"x3" (80 x 80mm) angle and the sides and back braced with 6" by 3" (150 x 80mm) channel. The whole lot was bolted together with large bolts with their heads concealed on the inside. An oxy-cutter wielded by Leith VK5LG was used to cut the nuts off all the bolts at the pug-hole end of the oven one weekend and four weeks later the pug-hole was full of firebricks and the steel plate from that end was cut into sheets and stacked.

They could see the far end of the basement!

Getting into the chimney presented its own problems. After all one of the advantages of the building was the chimney on which all the antennas would be mounted. It took several evenings with torches to discover that first you had to go down below the floor of the furnace through a channel about a 3ft by 2ft before you could stand up inside the chimney.

That was when it was discovered that there was a circular chimney inside the square one you see from the road. The internal diameter of the circular chimney is about 4ft or 1.3m so that to erect a ladder inside the chimney to get to the aerials a number of sections about 5ft long had to be made.

Photo 2 The insides before fitting out.

Fortunately there was a small flue that feeds into the chimney from the transmitter room so the cables did not have to go down into the basement first.

Once the way into the bottom of the chimney was discovered the next problem was how to get the first wires down the chimney which was too high to reach with any extension ladder and the workers did not have access to a 'cherry picker'.

Many and varied were the ideas offered - and tried, too. A rocket with a line attached was suggested but not tried. A 12-gauge shotgun loaded with wooden bullets to which a nylon fishing line was tied didn't work. The first bullet just disappeared into the stratosphere. At the second attempt, possibly because the velocity was too high, the line broke.

Then one morning Geoff asked his son Murray to bring along his bow and arrow and give that a try with the fishing line attached. The first arrow flew over the chimney but when he tried to pull it back gently so it would fall into the chimney it came right back over and fell down on the wrong side. The second one hit one or two bricks below the top of the chimney and slowly cartwheeled into the opening and straight down.

Once the first line was down it was easy to draw successively thicker cords till at last the first wire was in place. There was one moment of panic, though. Geoff was lying on the floor looking up the chimney to make sure the strings didn't snag on anything when, all of a sudden he thought the string had dislodged a brick, as this black blob fell down the chimney towards him.

He wriggled out of the chimney so fast it "looked like the Indian Rope Trick done horizontally", as he described it. What had happened was that someone had tied the reel of fishing line to the first cord and it was the reel he could see, not a brick.

Once they could feed a length of 12-gauge fencing wire down they made it into a loop inside and outside the chimney so should any new wires be required they could be easily lifted. Since that day many more wires have been fed through that chimney.

Once the bricks were removed, emptying the basement was relatively easy. Many of the steel sheets were too heavy to be picked up by hand or easily cut into smaller sections. So Treva VK5ZIS took his car around to the car park across the pug-hole from the incinerator. A rope was attached to the tow-hitch and he drove off while someone kept a foot on the sheet till the tension was judged to be enough. The foot was lifted, whereupon the great sheet of steel flew through the air and into the pug-hole.

Two other major demolition tasks remained. One was to break up the concrete and brick retaining wall where the ramp had originally been and where the new toilet was to be built. The other was to clean away forty years of greasy soot throughout the building but especially in the basement.

The latter was accomplished astonishingly easily when, one day, a heavy-duty fire hose was used as a last resort. The

soot and accumulated dirt almost fell off the walls. It was amazing!

The accompanying photograph shows what had to be used to break up the retaining wall. Instead of pouring a concrete wall and facing it with attractive bricks, Walter Burley Griffin had first built the brick wall and then tied the reinforced concrete facing to the bricks. Without the loan of the council jackhammer and the air compressor to run it, that wall might still be standing!

As the photo also shows the jackhammer was too heavy to be held horizontally by hand (after all it was intended for use breaking up a tarred road surface) so it had to be suspended by a block and tackle. Even so, the operators took it turns at 20 minute intervals and were very glad of the rests in between.

Geoff and Barry VK5ZBQ who shared the supervision had help from 50 or more members from the most junior to one of the oldest, Roy VK5AC (no doubt known to many of the longer-term readers). Roy manned the gate week after week during the four years it took to turn an incinerator into a meeting place.

After of the demolishing team had had their go, the builders, painters and carpenters were called upon. Cupboards were built, partitions erected and stairs constructed. A professional builder, the father of Garry, now VK5ZK, built the toilet block for an extremely reasonable price, but otherwise all the work was done by amateurs themselves (some of whom were, of course, tradesmen as well).

One door, that now opened onto thin air, was bolted shut, another, that led out to a very narrow stairway, was closed off to be used only for bringing large and awkward loads to the top floor. A ramp to allow access to the upper floor and a disabled toilet were later additions.

One of the major projects was the covering and sealing of those most attractive arched 'windows' that were a feature of the lower faces of the building.

Unfortunately these 'windows' were just shaped openings in which the shaped concrete forms had been fitted. They had never had, and had never been intended to have glass in them. After all who needs glass windows in a building designed to house an incinerator?

The building team did try to find a way to put glass in the openings, but it was just not practical, especially where it was realised that the windows would have needed to be lighted from the outside for the lovely shapes to be seen at night meetings.

This was another reason it would have been so much better if the whole building had been turned through 180°. All the most attractive sections face away from the road!!

The other major building task was to close the opening out to the pughole. That became a set of three windows looking out to what was hoped one day would be a garden.

As almost all the meetings held on the incinerator floor were evening meetings the garden never quite seemed to become a priority.

In terms of time taken, the demolition took something under a year. The conversion of the interior into a meeting-house took well over two years. So it was almost four years from the signing of the contract to the official opening.

A videotape of the official opening by David VK3ADW was shown at the wake. This is when we first heard of the astonishment expressed (by the members in general, and by the Federal Council) when Geoff mentioned the incinerator at a Federal Convention, and how very impressed David was to see the building, now.

The unveiling of the plaque, that day, was done by the Mayor of the Thebarton Council who had been enormously helpful throughout the reconstruction of the building. It is because this Council no longer exists, having been amalgamated with the West Torrens Council, that the WIA(SA Div) can no longer occupy the Burley Griffin Building. The end of another era.

The accompanying photographs go some way to showing what a beautiful building was built to house a municipal incinerator.

Photo 3 Making a hole!

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This Radio Star is alive and kicking

Internet won't kill the radio star: Rob

A SHARP-TONGUED newspaper editor once told cerebral palsy sufferer Rob Harwood he'd never make it as a journalist. That was more than 30 years ago, and Mr Harwood has been writing a monthly column for a national magazine for the past 20 years. His subject of

Robin Harwood at the console.

• Surfing the waves: "The

A sharp-tongued newspaper editor once told cerebral palsy sufferer Rob Harwood he'd never make it as a journalist. That was more than 30 years ago, and Mr Harwood has been writing a monthly column for a national magazine for the past 20 years. His subject of interest is short-wave radios, a hobby that he says has kept him in touch with the world and its affairs, all from his Newstead home. He told MANDY SMITH why even the Internet is yet to replace radio as an information source and communication device.

Written by Mandy Smith
Published in the Sunday Examiner, June 6, 1999

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FOR 45 years, Rob Harwood has had a special insight into the world.

As a short-wave radio listener, Mr Harwood has heard broadcasts from around the world, whether they be civilian stations, war communication or police frequencies.

He spent hours glued to his radio during the 1998 Sydney to Hobart yacht race disaster, and is now listening to broadcasts relating to the unrest in Yugoslavia and Kosovo.

"I have heard anything from the US military bombers as they go in; when the Vietnam War was going on and the planes were going across the Pacific, it was almost non-stop chatter," he said.

"Down here in Tasmania we are in a very strong position, we can hear things you can't hear in countries with busier airwaves."

Mr Harwood, 52, writes a regular column in the national Amateur Radio magazine, and does other freelance work, all while keeping in touch with other enthusiasts from around the world.

"I started off when my parents had a big, old mantel radio and I remember in the middle of June getting out of bed at 6am and rushing to the lounge and managing to pick up the BBC and rushing to tell my parents," he said.

"It was exciting because I wasn't allowed to touch the radio because it belonged to dad, but I was just fascinated by it and by radio signals."

"Because of my disability I suppose it was very, very exciting."

Mr Harwood was eventually given his own mantel radio.

"The first exciting signal I heard on the radio was a Sputnik," he said.

"That started me off."

"It took me another 15 years before I got my own amateur radio."

Mr Harwood's Newstead bedroom now houses two receivers, a VHF transceiver and computer.

He says the Internet has become an invaluable source of information.

"I get more of my information from the Internet than I do my radio now," he said

"By using the Internet I can communicate indirectly with the stations and you can download audio from the Net."

"I can open a receiver in, Sweden from here via the Internet, you can operate receivers in lots of other countries."

"Surfing the waves. –The Internet can be stopped - the conflict in Yugoslavia proved that - but they can't stop radio," says, Rob Harwood.

That allows me to hear things we can't hear here.

"Most of my information for my column I get from the Internet or people send it to me. (But) when there's an international crisis we go to shortwave."

"The Internet can be stopped - the conflict in Yugoslavia proved that - but they can't stop radio."

"The Internet is certainly different from short-wave radio but there's still enough to keep my interest up."

Mr Harwood said that like short-wave, computers had helped open up the world for him, and others with disabilities.

When he started his magazine column, he had to type each article, double-spaced and post them to his editor three weeks before deadline; now he taps them into the computer and sends them via email within minutes.

"If I had a computer when I was at school I reckon 1 would have gone on further," he said of his journalistic ambitions."

"I know people who are badly handicapped but all their intelligence is up there but with a computer they can communicate."

ar

A Binaural Direct-conversion Receiver

Drew Diamond, VK3XU
45 Gatters Rd.,
Wonga Park, 3115.

If you have been following developments in direct conversion (DC) receiver techniques, you will be aware that there are basically three (non-digital) methods. The first, and traditional approach is to mix the incoming signal with a VFO whose frequency is the same, or near that of the signal frequency. The wanted demodulation product is audio, which is generally band-pass filtered and amplified to the required level for listening.

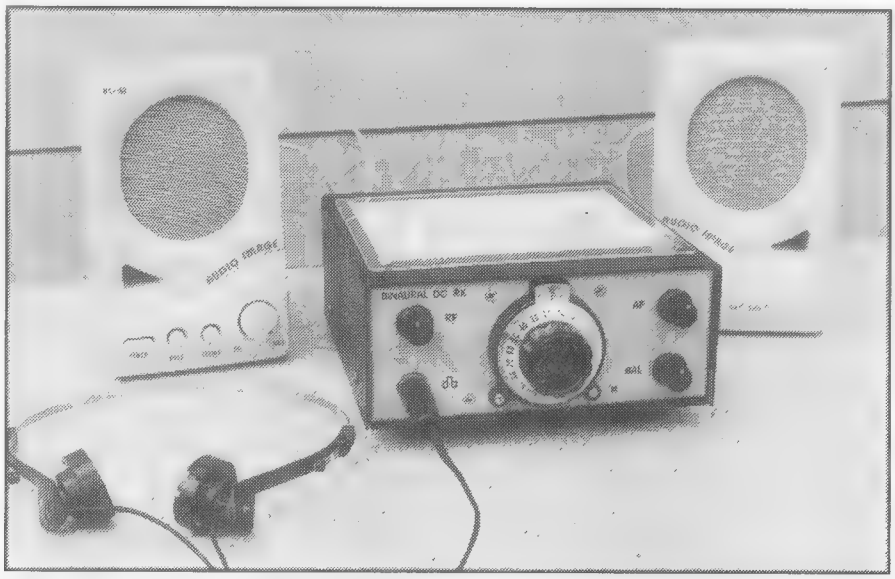

Photo 1: the complete set-up

With care, a quite respectable DC receiver can be built from one of the many descriptions in contemporary radio literature. The performance obtained may seem to be out of all proportion with the simplicity of the set. However, because the unwanted "sideband" is not suppressed, we may hear twice as much noise and adjacent-channel interference than from a "single-signal" receiver. A good straight DC receiver will have a pleasing clarity which, perhaps, partially compensates for this shortcoming. For further information, References 1 and 2 are recommended as being particularly good essays.

Even with a well-made audio filter, reception of the "audio-image" always occurs with a first-method DC receiver. Various ingenious techniques have been applied to the audio-image problem. Most published designs make use of 90-degree phase shifted VFO, and 90-degree shifted audio components which, when correctly combined, results in adequate suppression of the unwanted sideband (see Refs. 4, 5 and 6).

Another technique inclines towards superhet principles, where an additional local oscillator moves the signal to some intermediate frequency for manipulation (Refs. 7 and 8). However, these last processes are rather complex, and require close-tolerance components and diligent attention to design and layout, which gets away from the beautiful simplicity of the first method.

Binaural Receiver

Happily, there is a middle-ground approach, which was described by Rick Campbell, KK7B, and published in the March '99 issue of QST (Ref. 3). In essence, Rick uses

continued on page 26

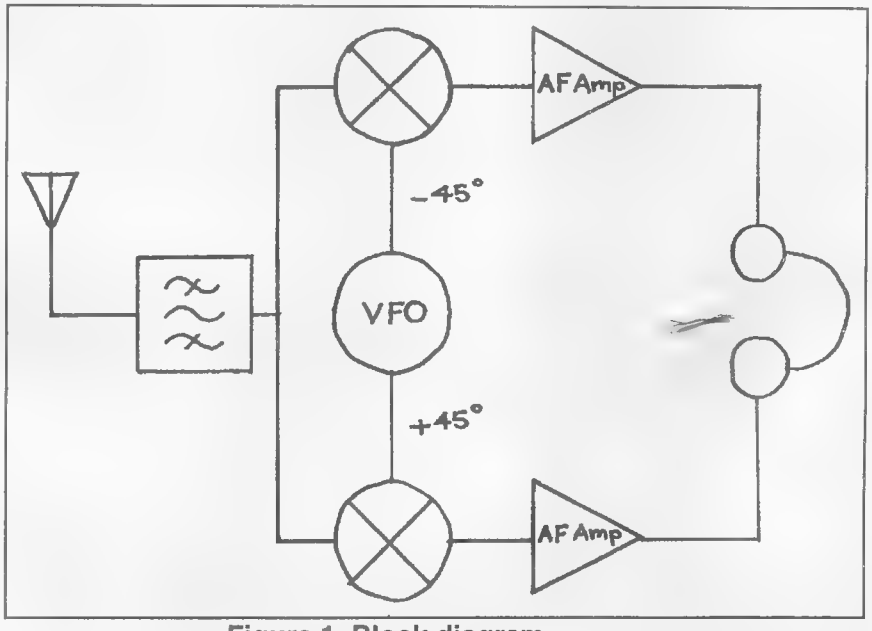

Figure 1. Block diagram

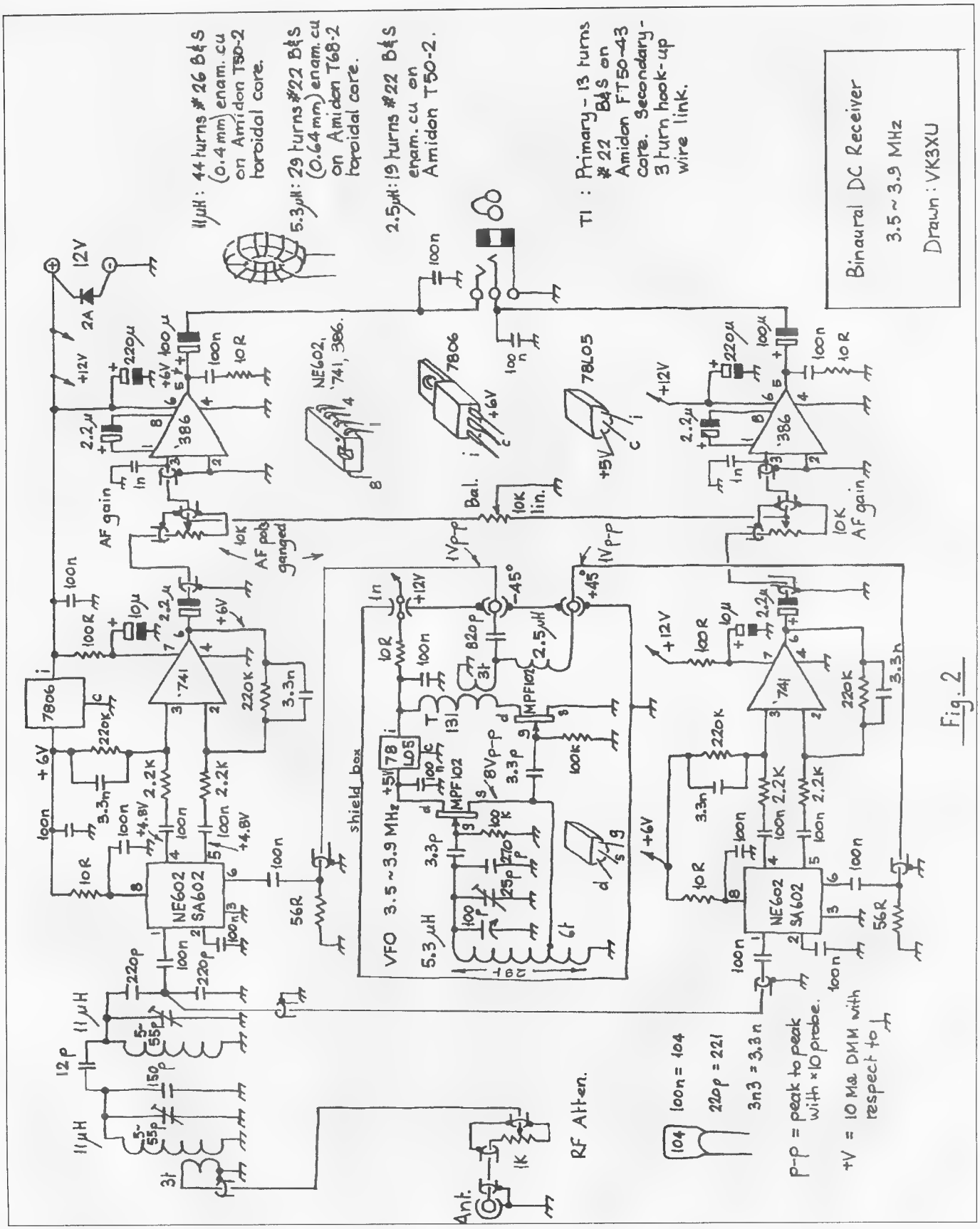

Figure 2. The schematic

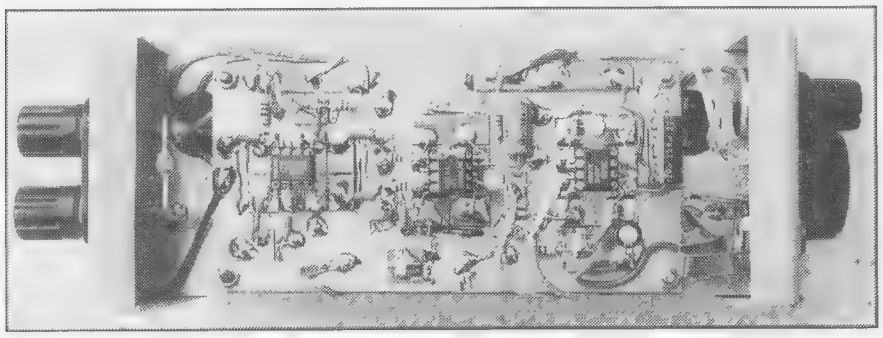

Photo 2. Input band pass filter and shared 7806 regulator chip located on one board

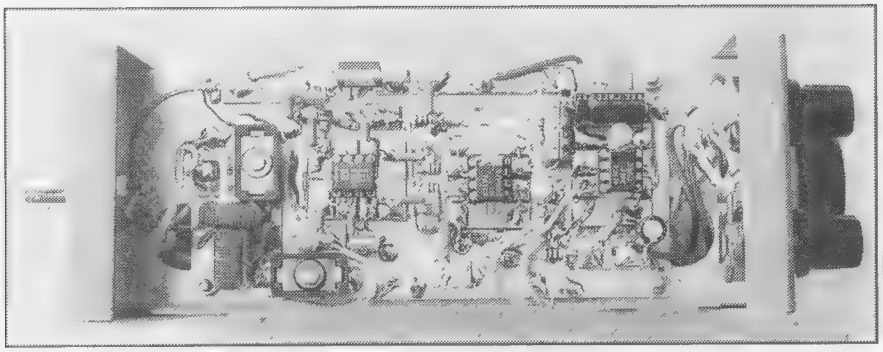

Photo 3. The bare bones receiver

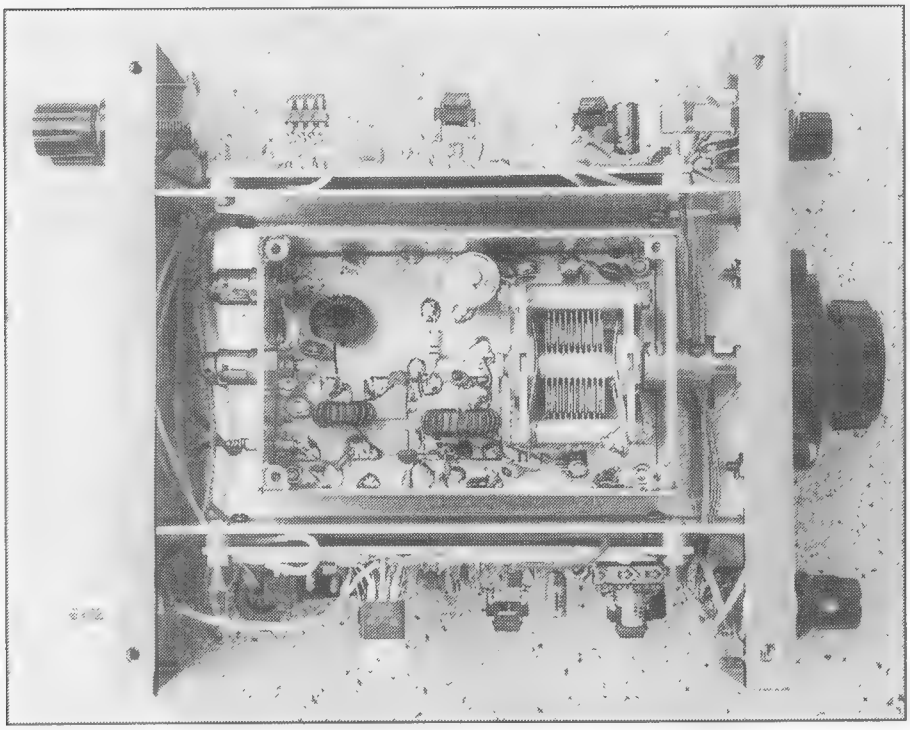

Photo 4. The 95/60mm VFO board

two identical DC receivers, which are fed in-phase from a common antenna input (see block diagram Fig. 1). Each mixer is injected with a VFO signal, which is split into two components whose phase difference is effectively 90-degrees. Detected audio (AF) components are amplified, then applied to the left and right coils of a pair of stereo headphones. The same demodulation products are present in each channel, but their relative phase provides a stereo effect which, to the listener, is perceived as having come from the space around the head.

Listening to CW, and SSB stations on a binaural receiver is a pleasantly novel sensation, to say the least. It's as if the signal were put through a PC sound-card. As a signal is tuned, it seems to move in position, and is perceived to go from one side to the other. The spectrum within the receiver's pass-band appears to be spread out in the space around the listener's head. The wanted signal can be made to take up a location somewhere in the middle. Unwanted, or incidental signals will appear to right and left. Writing personally, I don't mind hearing a bit of adjacent-channel chatter, or other CW signals- it all adds "atmosphere" to the experience. Any necessary selectivity is obtained from the "filter between the ears". Interestingly, receiver noise, natural and man-made noise is observed to be evenly spread, and is therefore less annoying than if it were concentrated in the middle, as in a conventional receiver.

Sensitivity of my model is quite good. Signals as small as 0.2 microvolt may easily be heard. Signal handling, although not as "strong" as the QST pattern, should be adequate for all normal listening. A high-powered local transmitter, only about 900 metres from here causes no significant over-load problems. Whilst not as striking as with 'phones, a pair of PC "sound-blaster" style speakers also works well with the receiver. The set operates from a nominal 12 V dc supply, and draws about 30 mA.

Circuit

As some of the components used in the QST circuit may be difficult to obtain here, I have adapted and modified the popular NE602-LM741-LM386 plan to the binaural scheme.

Referring to the schematic, Fig. 2; signals in the 3.5 to (about) 3.9 MHz range from the antenna via the 1 K attenuator pot, are admitted by the top-coupled band-pass filter, and applied simultaneously to the input pin 1 of each NE(SA)602. The conventional Hartley oscillator, maintained with a ordinary MPF102 FET, is variable from 3.5 to about 3.9 MHz, and is followed

by a second MPF102 as buffer amplifier. Broadband transformer T1 steps the drain impedance down to approximately 50 ohms in order to drive the 56 ohm terminations at pin 6 of each '602

To obtain our -45 and +45-degree VFO signal components, the buffer amplifier's output signal is made to negotiate a capacitor, whose reactance mid band is -50 ohms for the -45-degree signal, and a coil of +50 ohms to produce our +45-degree signal.

For each receiver channel, demodulated (or detected) audio as applied to a conventional LM741 and LM386 audio amplifier to raise the AF signal to an appropriate listening level. The '741 has 3.3 nF capacitors across each 220 K feedback resistor to roll-off the upper frequency response, starting at about 1 5 kHz, and is 10 dB down at 4 kHz.

Construction

In order to keep unwanted broadcast, TV and FM signals out, the receiver, and especially the VFO, should be housed in a metal box. The home-made aluminium case shown in Photo 1 measures 65 x 155 x 155 mm. Any box or case of simular dimensions will do I prefer "paddyboard" (see Ref. 9) style board construction, because it allows almost unlimited experimentation during, and after fabrication Each receiver board measures 55 x 110 mm. The input band pass filter, and shared 7806 regulator chip are located on one board (Photo 2), and the second board has just a "bare-bones" receiver (Photo 3). Wire wrap sockets mounted upon substrates are recommended for the I C.'s

The schematic shows which signal-carrying connections need to be made with shielded wire. Keep wiring to the 'phones connector and AF gain/balance pots well separated The balance (bal) pot is not essential, as the sensitivity of each of the receive channels are almost (or should be) identical. However, there may be times when it is required to move the wanted signal to one side without using the VFO control

If you are using a small antenna, and/or there are no strong transmitters in your area, then the RF attenuator pot will probably not be required, but it is shown here just in case.

The VFO board measures 95 x 60 mm, and is shown in Photo 4. The VFO components were mounted paddyboard style first, then the circuit board walls soldered on to make a box 40 mm high Use a good quality air-spaced variable capacitor of about 95 or 100 pF maximum.

Some method of slow-motion driving the VFO capacitor will be required. The dial shown in Photo 1 is available from Dick Smiths. However, they do seem rather dear, and anyway, everyone has their own ideas about dials, so naturally I leave that department to you.

Operation

The receiver must operate from a low-impedance 12 V dc source, such as a regulated power supply, or fresh batteries. The earphones do not have to be fancy or expensive (but so much the better if you can use a posh set) The '386s will drive just about any of the customary impedances, but if your 'phones are low impedance, such as 8 ohms, you may need some resistance in series with each coil to limit the power to a reasonable level.

Check all your wiring, component locations and polarities (where applicable). If you have used sockets for the ICs as suggested, remove them from their sockets Apply 12 V supply. With the means available to you, check that the VFO is working Adjust the 25 pF trimmer so that 3 5 to about 3.9 or 4 MHz is generated.

Each audio amp may be tested first Connect 'phones or speakers Apply 12 V with just the '386s inserted. With the AF gain pot at maximum you should hear just a soft hiss Touch a screw-driver blade to pin 3 of each '386 A buzz will be heard, indicating that the amplifier is working. Remove 12 V and insert the '741s. Re-connect 12 V. The soft hiss will be a little louder now. Touch the screw-driver to pin 2 or 3 and expect a louder buzz. Insert the '602s. A little more noise now and if all is well, it will have a "spatial" sound

Connect an antenna. We all hate interference, but this is one time when the line-buzz from a nearby TV set or PC makes a handy alignment tool. Carefully adjust / peak the 55 pF trim caps at the input filter for best sensitivity flatness across the band Some compromise may be necessary, but the set should be quite sensitive between 3.5 and 3.9 MHz. When all is satisfactory, calibrate the dial, or make a look-up table or graph, as desired

Some salient dc and p-p oscilloscope voltages are shown on the top circuit to assist in any necessary troubleshooting

Parts

The majority of components are available from the familiar electronics suppliers, such as Altronics, Dick Smiths, Jaycar and Electronic World. See Hamads in this journal for Amidon core suppliers. Electronic World (ph 03 9723 3860) will also answer mail orders, and can supply all the usual parts, in addition to NE(SA)602s, 1 nF feed-through caps, 5-55 pF compression trim caps, 25 pF beehive trim caps and 95 (+200) pF variable cap I always keep a few spares, so do write to the address shown if you have genuine difficulty in obtaining any of the parts specified (SASE please)

References and Further Reading

1 "Direct Conversion Receivers", J Carr, Elektor Electronics Mar 94

2 "Improving DC Receiver Design", N Hamilton, G4TXG, Rad Comm Apr 91.

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4. "A New Breed of Receiver", G Breed, K9AY, QST Jan 88

5 "High-Performance, Single Signal DC Receivers", R. Campbell, QST Jan 93

6 "Polyphase Direct Conversion SSB", R Hosking, EW + WW* Mar 94

7 "Direct Conversion SSB Receiver", F Dorey, EW + WW Sep 94

8. "High Performance Direct Conversion", R Green & R. Hosking, EW Jan 96.

9. "Paddyboard Circuit Construction", D. Diamond, AR Feb 95

*EW +WW – Electronics & Wireless World. EW – Electronics World

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Frequency:	144-148MHz
Gain:	7.8dB
Max. Power:	200W
Length:	4.53m, max wind 40m/s
Type:	3 x 5/8λ
Connector:	SO-239 socket

D 4850

$199 SAVE $50

23cm F-1230A

Frequency:	1260-1300MHz
Gain:	13.5dBi
Max. Power:	100W
Length:	3.06m
Type:	25 x 1/2λ
Connector:	N-type socket

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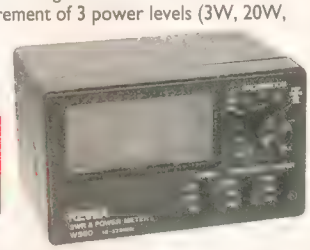

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D 3700

Frequency Range:	Tx 144-148MHz Rx 110-180, 300-520, 800-824, 849-869, 894-999MHz
RF Output:	70, 50, 25, 10W
Sensitivity (Ham bands):	0.2uV (Main Rx), 0.25uV (Sub Rx)
Dimensions:	140 x 40 x 180mm (WHD)

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2 year warranty

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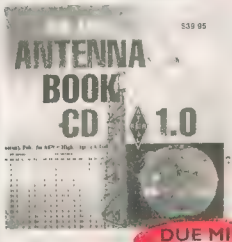

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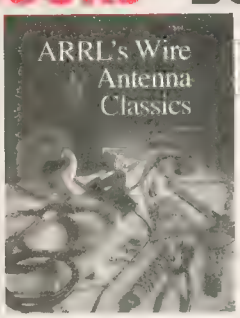

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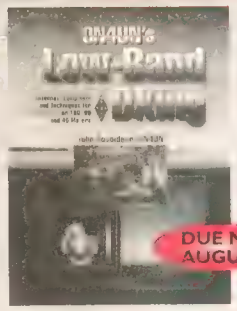

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A 4355 – B 4055 DPS S/C

Technical Correspondence

An Automatic Tracker -for Tuned Circuits

Joe Rotenberg VK3BBN
20/104 The Avenue, Parkville VIC 3052

In the early days, radios had a good many knobs. Each circuit in the radio would have to be tuned individually. Later the multi-gang condenser came in enabling several circuits to be tuned off the one shaft. Although this reduced the number of separate controls, it introduced a new problem: tracking. The circuits would need to stay in step.

Modern receivers sometimes partially solve the problem of tracking by having some of the circuits broadband tuned, which makes tuning less critical but introduces another problem: cross modulation by strong signals which haven't been rejected by the broadband network.

Here is a novel way of overcoming this problem. Fig 1 shows a varactor-tuned circuit.

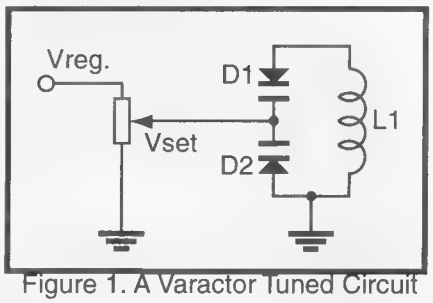

Figure 1. A Varactor Tuned Circuit

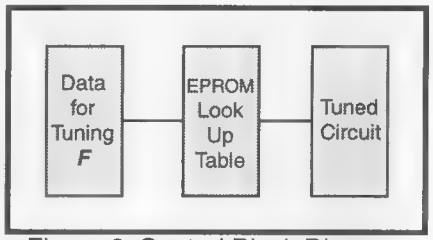

Figure 2. Control Block Diagram

The capacitance to inverse voltage characteristic will be rather idiosyncratic, varying considerably with manufacturing tolerances in the varactors and between various types.

However, we can correct this by using an appropriately adjusted weighting network to apply the control voltage.

The easiest plan would be to design the network in such a way that the apparent frequency vs voltage network is beautifully linear and then all the circuits can be made to track in step.

In this, the computer age, the easiest way of generating an arbitrary curve that I know of is with an EPROM, as shown in Fig 2.

Various voltages are applied to the circuit and the voltage and tuned frequency is tabulated. The resulting data is then used to program the EPROM. The easiest way to convert the data to an analog voltage is with a ladder network as shown in Fig 3, but a large selection of digital to analog devices is readily available.

This circuit opens up some novel ways of designing radios. For example, how about a four stage TRF receiver on the broadcast band with a single dial. No nasty heterodynes!

How about tracking the transmitter and receiver stages of an FM transceiver with 600 kHz offset for the repeaters where necessary? Just an idea!

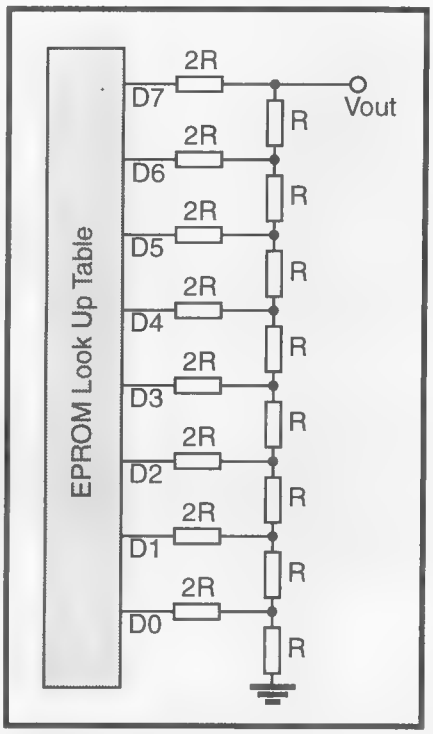

Figure 3. R2R Ladder D/A Circuit

ar

Update on the 160 Metre Bandpass Filter

Keith Gooley VK5OQ

A design for a 3-resonator bandpass filter centred on 1.825 MHz was published in the February 1999 issue. Shortly after publication I received a package from Ron Sanders VK2WB. Ron operates RJ & US Imports the importers of Amidon ferromagnetic cores and a regular advertiser in AR.

The package contained a letter suggesting that I try using inductors in my filter wound on iron powder toroids. This would have the major advantage of drastically reducing the size of the filter, which in the original form, has to be quite large. This is because the high Q airwound inductors must be screened with a shield which is 3 or so times the diameter of the coils in order not to overly reduce the Q.

In the package Ron had also kindly included three 27 uH inductors wound on iron powder toroids to try in the filter. They consisted of 27 turns of 26-gauge wire on 2 stacked T-68-15 iron powder toroids.

Unfortunately the Q of these was much lower than the airwound coils. About 100 compared with 300 for the airwound coils. This resulted in a filter with rounded edges and a higher insertion loss of 9.1 dB compared with 5.5 dB. Attenuation away from the passband was not affected.

This set me thinking and looking through the Q curves of other Amidon toroids. It appeared that Qs comparable to those obtained from the airwound inductors made with Litz wire could be obtained using a larger diameter toroid than those Ron tried. I wound 3 inductors on T-94-2 toroids using 24 SWG (0.6 mm) enamelled copper wire.

The required 57 turns occupies about 80% of the core circumference. It is not a good idea to have the winding start too close to the end as the coil self-capacitance may upset the filter design.

The results were very pleasing. The filter shape was almost identical to the computer simulation shown in the original article with an insertion loss of 5.5 dB.

So a filter can be built with equivalent performance and greatly reduced size compared with the original. RJ & US Imports doesn't stock the T-94-2 toroids but does stock the T-106-2.

This would make an excellent substitute with possibly even higher Q. The inductors would then be 45 turns 24 SWG (0.6 mm) enamelled copper wire.

ar

TECHNICAL ABSTRACTS

Gil Sones VK3AUI
30 Moore Street
Box Hill South Vic 3128

Black-Black-Black

EVERY now and then one encounters a resistor that has assumed this colour code before expiring. If you don't know the value replacement can be difficult.

In the *In Practice* column of Ian White G3SEK in Rad Com July 1999 a solution to this problem is provided. The solution came from Dave Lauder G0SNO.

The solution is to carefully file a groove in the centre of the resistor until contact is made with the element. Then try measuring with your Ohmmeter between the file and each end of the resistor. With a little luck you will be able to measure the resistance of one half of the resistor.

This is shown in Fig 1.

This should work for wire wound, carbon film, and metal film resistors.

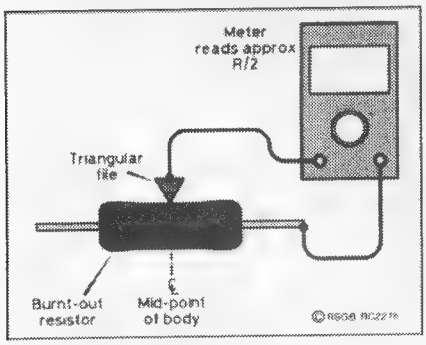

Fig 1. Measuring to mid-point of burnt out resistor

Carbon composition resistors may be tricky as the resistive core is in the centre of the body.

With carbon film and metal film resistors there is a complication due to the practice of cutting a spiral groove in the resistive film to set the resistance value. You may have to carefully expose the spiral so as to be able to judge where the centre point is.

This technique should at least put you on the way to determining the value of a burnt out resistor. The other problem is to work out why it burnt out but that is part of the fault-finding process.

Test Connections

In the *In Practice* column of Ian White G3SEK in July 1999 *Rad Com* a good tip for making temporary test connections to pins of IDC plugs or test points and also making temporary connection to multi way sockets.

The idea comes from Malcolm Perry G8AKX.

The idea for pins is to use a short length of stranded insulated wire with one end stripped for the test clip and the other end cut off square. The square cut end is simply pushed onto the pin for as long as needed. Soft rubbery insulation is preferable to the normal harder PVC insulation. The idea is shown in Fig 2.

Contact to multi way socket pins can be made by slipping a dressmaking pin between the socket shell and the crimp connector inside. This is also shown in Fig 2.

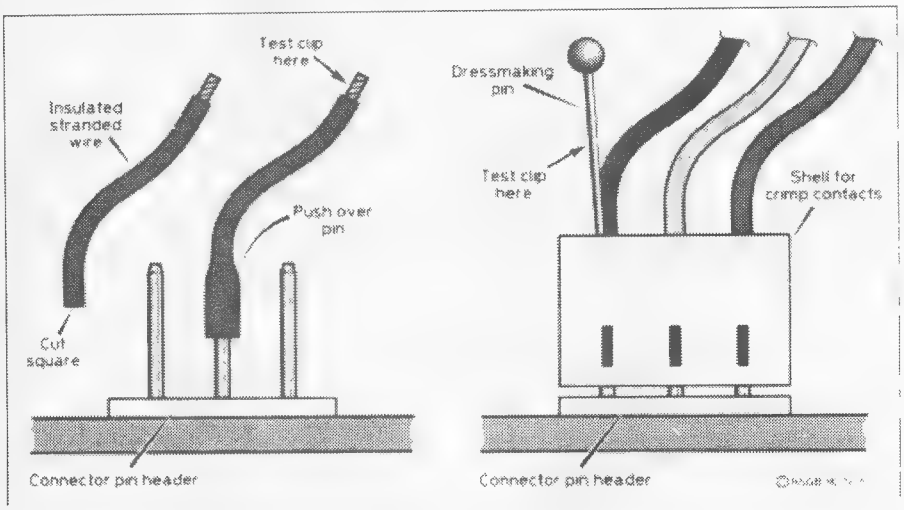

Fig 2. Temporary Test Connections

Correction

Max Riley VK2ARZ has brought to my attention an error in the Compact Mobile Tuner item which appeared in the May issue.

The error is in Fig 2 which appeared on page 30 of the May 1999 issue and which showed an output current meter as an addition to the tuner. The error lies in the wiring of the circuit diagram in Fig 2. The bottom contact on S2B is shown connected to earth. The earth sign should be replaced by an arrow pointing to C2 on Fig 1.

My thanks to Max VK2ARZ for bringing this error to my attention.

Amateur Radio

Do you have or know of a technical project that would interest readers? Contact Gil and tell him about it.

Simple 50 Ohm Feed W8JK Beam.

The W8JK is a simple beam with a bi directional pattern with modest gain. It suffers from some difficulty with matching due to its normal centre feedpoint impedance. However in QST June 1999 Robert K Zimmerman NP4B described a configuration which allows for 50 ohm feed.

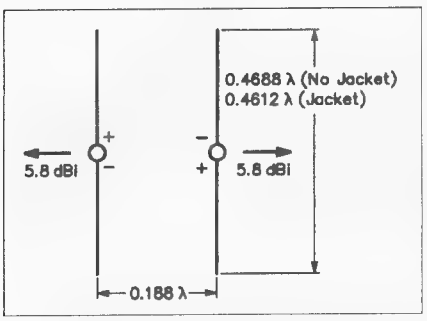

Fig 3. W8JK Beam Centre Fed

By feeding the elements off centre the feedpoint impedance of each element is made 25 ohms. This can be transformed to 100 ohms by the use of a quarter wave transformer of 50 ohm cable. The two 100 ohm impedances combined at the array feedpoint give a 50 ohm point at the feedpoint for the array. Thus the W8JK beam has a 50 ohm feedpoint.

The usual arrangement of a W8JK beam is shown in Fig 3.

The centre feedpoints of each dipole are 17.9 ohms. The dimensions are for elements made out of coax both with and without a jacket. In Fig 4 the beam is shown with offcentre feedpoints arranged to give 25 ohm feedpoints for each dipole.

The gain in each beam direction is 5.8 dBi.

The complete beam made out of RG8X coax is shown in Fig 5. This coax has a foam dielectric and a velocity factor of 79%. You may have some difficulty obtaining RG8X locally but any 50 ohm foam coax with a 79% velocity factor would do. In Fig 6 the feedpoint detail is shown. The beam being made of coax was supported on a frame of PVC pipe such as conduit.

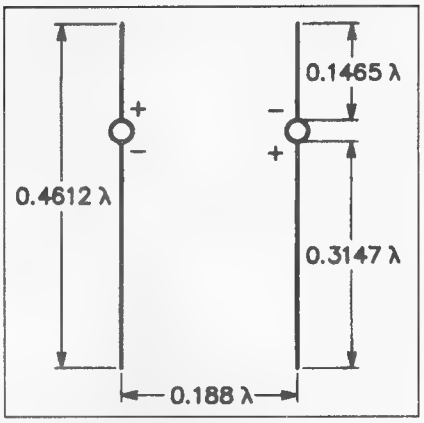

Fig 4. W8JK Beam Offset Feedpoints

Dimensions for 6 and 2 metres are shown in Table 1. The SWR performance of a 6 metre version is shown in Fig 7.

Table 1. Dimensions for 2 and 6 Metre W8JK Beams Using RG8X Dipoles Supported by PVC Pipe.

	2 Metres (144.2 MHz)	6 Metres (50.1 MHz)
Dipole Length	865 mm (34 inches)	2640 mm (104 inches)
Dipole Spacing	510 mm (20 inches)	1230 mm (48.43 inches)
Stub Length	280 mm (11.02 inches)	855 mm (33.66 inches)

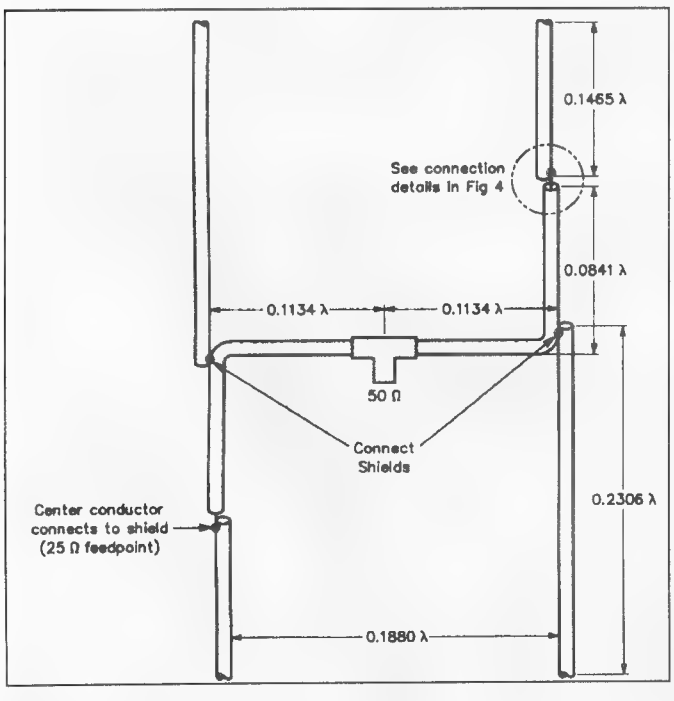

Fig 5. W8JK Beam built and fed with 50 Ohm RGBX foam dielectric Coax

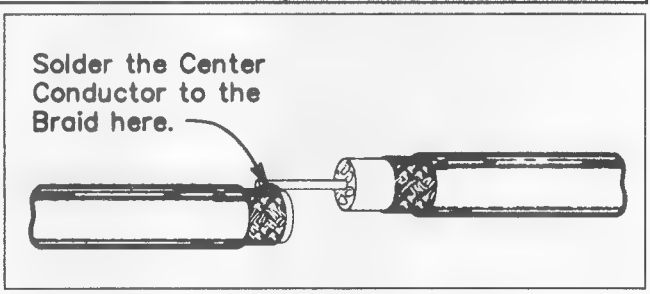

Fig 6. Feedpoint Detail of Offset 25 Ohm Feedpoint

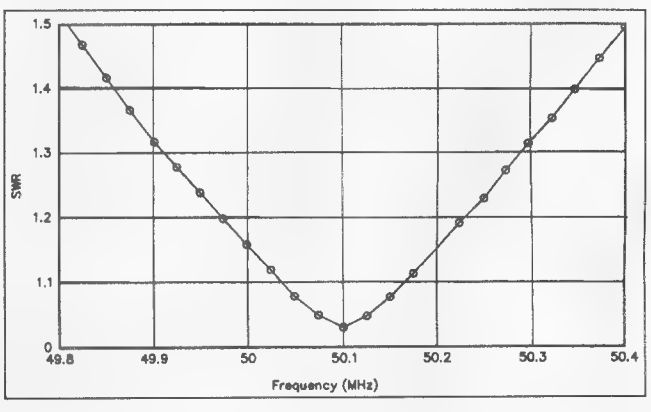

Fig 7. SWR Plot of 6 metre Beam

Try This

PSK31 - Digital RTTY

Fred Johnson ZL2AMJ

Do you have a Computer with a Soundcard? If so and assuming that you have a HF transceiver then you can operate "live keyboard-to-keyboard" and HAVE FUN! Fred ZL2AMJ encourages you to "Have a GO!" with Radio Telegraphy! This message is to draw your attention to the "new" mode PSK31, and to other modes too.

I am VERY impressed with PSK31 and enthusiastic for it to be tried out by others. It is AMAZING! I think that it performs better than the many claims made for it!

You can get details from: http://aintel.bi.ehu.es/psk31.html

You can read about it in QST, May 1999 pages 41 to 44. It is also described in RSGB "RadCom" December 1998 pages 14 to 16, and January 1999 pages 26 and 27.

Why am I amazed? All you need to get going is a HF SSB Transceiver of conventional design and a computer with a soundcard. You run two shielded audio cables between the rig and the sound card.

You download FREE software from the web page (the page given above). When all is set up, you have a live-keyboard for chatting with other HF stations in RTTY fashion. This mode is a lot of fun.

All the info you need to get going is obtainable from the web page.

Performance

Measurements here (recognising my limited resources) confirm that the bandwidth of the transmitted signal is very, very, narrow - 31 Hz is claimed. I have successfully resolved two entirely separate QSO's operating about 100 Hz apart!

My first contact was with Dave VE7DPE near Vancouver, around 14.069 MHz. I could not actually HEAR his signal - but the software dragged it out of the noise to print it on the screen! We both switched over to the QPSK mode (which gives a form of error-correction - provided in the software) and we had a satisfactory contact! I cannot recall ever before working a station in such conditions. I was running about 50 watts - according to my SWR indicator - to a dipole.

PSK31 was developed by Peter Martinez G3PLX (of much AMTOR etc fame). It is in its 2nd or 3rd year of development.

It has suddenly become popular because standard soundcards can be used with Windows 95/98 software (provided free by Peter) to do all the processing.

It turns your computer into a HF keyboard terminal with digital signal processing being done by the soundcard.

No special modems are needed. It is easier to get going than HF packet.

This is a combining of computer techniques and radio techniques. Who said that new developments don't take place in Amateur Radio today? It seems that this mode will be a winner. This should bring back much sparkle to Amateur Radio.

I'm VERY impressed, I hope that you will be too. Other ZL stations are active with this mode. Don't take my word for it ... read about it and give it a go!

But other similar modes are available too! Try Nino IZ8BLY's Hellschreiber program. It is reported that there are nearly 50 countries in action with hundreds of "Hell" operators active. The DX is good - exotic countries like Iceland, Morocco, Fiji and Curacao are active. Europe can be worked using 50W and a dipole.

Read about Hellschreiber in *"Break-In"*, October 1998 pages 7 to 9, November 1998 pages 4 to 7 and December 1998 pages 6 to 8:

The best news of all is that the hardware setup for IZ8BLY's Hellschreiber is EXACTLY THE SAME as for PSK31!

You can check out the world of Hell on the web site at: http://www.qsl.net/zl1bpu and download the latest Hell software from there.

Look at the "Getting Started" page for "Where should I operate?" and "Where will I find Hell signals?"

If you are keen for other modes too, you can also try Slow-Scan Television on the HF bands! See "Break-In", May/June 1999 issue, page 10.

If you thought that you only had a computer with a soundcard, and a separate HF transceiver! You are wrong, you have a very versatile radio telegraph terminal!

Have FUN! Fred Johnson ZL2AMJ

ar

Nally

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Have you tried DXing, microwaves, CW, high speed data, ATV, operating portable, slow scan TV, QRP, contesting, homebrewing, AM, UHF, packet radio, foxhunting, building repeaters, JOTA, 160 metres or publicising amateur radio?

Write about it and send it to Amateur Radio - the magazine which covers more facets of amateur radio than any other.

How it Began - RTTY in VK-Land

VK3KF Eric Ferguson (SK)

Eric Ferguson VK3KF was first licensed in 1927 as OA2FE, then in 1937 as VK2BP, in 1938 VK3BP and in 1956, VK3KF until his death. During World War II he was in a secret Army Signals Unit involved in HF/DF and the Japanese Kana code. Eric was very active in the provision of the RAOTC monthly broadcast for some years until poor health overtook him. In the post war years Eric was a communication engineer with the Department of Civil Aviation and specialised in RTTY modes with a laboratory in the old Rialto building. It was during this period that he brought about the inclusion of RTTY as a permissible amateur mode in Australia. The following story was written by Eric about 1980 but was not published until March 1997 in the RAOTC Journal. We thank the RAOTC Journal for permission to publish here.

Allan Doble VK3AMD

I have had my arm twisted in recent times to disclose some of the early trials and tribulations that accompanied the effort to get amateur RTTY introduced into Australia.

On previous occasions I have set out to enumerate some of these, but for one reason or another, I have become bogged down as it were, with the result the drafts have never been completed. However, because the 'arm twisting' has become more consistent in recent weeks, I feel I must make another effort to stimulate the 'grey matter' to the extent that this contribution may be a more successful one.

The first amateur RTTY activity in Australia and as far as I know, in the Southern Hemisphere, erupted early in 1957. It was during a QSO with Forest Castle KR6AK, an American serviceman then stationed in Okinawa. He inquired about amateur RTTY activity in this neck of the woods, to which I could only reply that I knew of no such activity, but added that I was technically involved as part of my job in a Research and Development organisation of the Government.

As a result of that and subsequent QSOs with KR6AK, it was arranged that I would listen for him on equipment at my place of work on a prearranged frequency in the 21 MHz band. The first attempt to get intelligence was not successful and was proved to be because in my ignorance, I had not realised he would be transmitting 45.45 baud whilst the machines at work were adjusted for 50 baud operation. After this problem was ironed out during a CW QSO, another test was organised and reasonably good print-out was achieved in spite of the receiving location in the city.

I mention 'arm twisting' in the preamble, but the intensity of this was nothing to that impounded upon me by KR6AK in his effort to make a 2-way contact with him. Not having any RTTY at VK3KF, my involvement was only luke warm and it did not occur to me that perhaps I could, to some extent, satisfy him.

At that time I was conducting propagation studies and the effects of this upon RTTY signalling. This included a 'twin-plex' system under test, whereby two independent RTTY channels were transmitted simultaneously on the one transmitter, but received by separate receivers and decoders. For the purpose of this and other items on the agenda, I had established a radio link between my section of the laboratory via Sydney and then on back to receivers also in the laboratory.

Perhaps a brief run down on this link may be of interest to some. RTTY developed by one or two TD machines was fed to a VHF Transmitter, the antenna for which was on the roof of the building.

Today the roof of that old building is reported to be some 250 metres high). These signals were received, demodulated and applied as FSK via a land line to a transmitter situated some twenty miles to the north of Melbourne. This HF transmitter fed a vee beam centred on the receiving centre in the Sydney environs where the signals were received, demodulated and regenerated. They were then fed by land line to a 5 kW transmitter, beamed back to Melbourne and received in my laboratory 'den'. So by this means, I was able to talk with myself as it were at the same time recording various phenomena.

I have described this briefly as a lead up to the next part of the story and the continued involvement with KR6AK. As I had no trouble (or very little) when receiving him, it appeared to me easy

enough to get him to check reception of the Melbourne transmitter at a time when it was known that the Sydney complex would be shut down. Normally it was in operation from 9 am - 4 pm weekdays.

At the appointed time a series of RYs and quick brown foxes were put to air and even with the vee beam favouring the Sydney direction, S9 plus signals were reported the next day by KR6AK with almost one hundred percent print out. My enthusiasm began to warm up a little, but there was still no RTTY equipment in VK3KF.

The thinking cap was donned once more and it came to mind that a crystal controlled FSK oscillator which I had developed mainly for the 'twinplex' mode could easily be adapted to excite the VK3KF transmitter and almost over night a simplified version of this was knocked up. Sorting through a box of crystals, one was found which, on a fourth harmonic, would give me an output on 21090 kHz. The stage was set for the next adventure.

During my next scheduled CW QSO with KR6AK, I requested a QSY to 21090 kHz where by means of a hand key I sent a series of marks and spaces (key down - M and key up - S). After some juggling with the shift control my signals entered his M and S filters... What more could I do? Still without a printer, etc.

The following week when working with a Test and Distortion measuring set (TDMS-5) it came to me that I could borrow it as it was capable of sending quick brown fox ad infinitum with various speeds and more importantly, was readily transportable. The following weekend, this was attached to the FS keyer at VK3KF with the result, lines and lines of quick brown fox appeared on KR6AK's page printer. However, no 2-way contacts were yet established although we had printed with a measure of success amateur station to amateur station. It now appeared that I could do no more even though KR6AK renewed his arm twisting with renewed vigour.

The next step to get VK3KF operational on RTTY was an arduous one and entailed the loading into the car one Friday at 5 pm of a model 15 printer, a demodulator, power supplies and a conglomeration of connectors, etc which took until about 3 am on Saturday morning to assemble (shades of the night owl theatre) and make the station operational. One thing had been forgotten, the tuning fork to reset the model 15 to the 46 baud speed and it immediately become obvious when we attempted to have a QSO. However, after juggling with the motor governor good printout was achieved at both ends and so was established the first ever amateur RTTY 2 way QSO out from or into VK-land. The exact date I cannot recall as the station log for that year cannot be found, but it would have been about the end of June 1957.

On the Monday all the gear had to be dismantled and returned to work but was again loaded up the following weekend and put to into service at VK3KF. Contact with KR6AK was again successful from the word 'go' (the tuning fork having not been forgotten) and it was during this QSO I explained that I was not operating legally as F1 emission was not on our list and that I did not want to bring down the wrath of the PMG on my head. He of course was bitterly disappointed, but I made it clear it would be the last RTTY transmission for the time being until I had sorted things out with Officialdom.

The story may have ended there if it had not been for the reception of some of the stations from the USA during Sunday afternoon. I felt quite frustrated, but was loath to attempt a call because of the reasons given to KR6AK. In any case, it was my work program which put a stop to this nonsense as it became necessary for me to spend time in other parts or Australia and in Papua-New Guinea and this involvement did not end until late in the year.

During my absence, KR6AK must have been really busy as I found a number of letters awaiting me which offered quite a few items such as printer, de-modulators and the like. Offers which I was reluctant to take up, but there was one letter which had me wondering 'what next'. This letter informed me that a Model 15 printer with spares had already been shipped to me. It also contained all the necessary 'paper work' required by Customs... It appeared that I was not to be let off the hook. VK appeared to be a big fish in the USA, RTTY wise, at least.

If I was to become the proud possessor of a model 15, then it behoved me to think about a de-modulator. That actually was no real problem as I had already been involved in the development of such a device. Time to build a amplified version being the only drawback. Considerable 'midnight oil' was expended on this project which was eventually taken to work and put through its paces, whilst at the same time I applied to the PMG for a permit to operate the F1 mode.

The first amateur RTTY activity in Australia... erupted early in 1957...during a QSO with Forest Castle KR6AK, an American serviceman then stationed in Okinawa. He inquired about amateur RTTY activity in this neck of the woods, to which I could only reply that I knew of no such activity

Needless to say, the demodulator was finished before any sign of a permit appeared and it was not until early 1958 that a three-month permit was as I thought, reluctantly granted. In the mean time I had another problem to contend with. The model 15 had arrived and in their wisdom or lack thereof, the Customs department had assessed duty at an amount which I thought was over the odds, as some might say, an amount which I was not prepared to fork out. However, in the end and in view of its non-commercial application, the printer itself was admitted free, but duty had to be paid on two spare motors as well as the one in the machine itself. Eventually the crate arrived at the home of VK3KF at a cost of about twenty five pounds or fifty bucks we say in this day and age.

It was about the middle of February 1958 before VK3KF was operational on RTTY to my satisfaction and with all my very own equipment. The permit to operate F1 on a frequency of 21090kHz on the wall and my fingers itching. However, I had promised that I would endeavour to make the first VK-W QSO with an old buddy of mine , W6CG who these days is well known among the satellite fraternity, but who dropped out of RTTY some years back and in view of the promise, a schedule was arranged for 28th May 1958 for 0300Z on 21090 kHz.

Whilst waiting for the date to appear on the calendar and to fill in time, I had printed out a number of Americans, among whom were W0BP, W3PYW and W2RUI. Sad to say, both W0BP and old 'Skipper' W2RUI are now both silent keys.

The 28th of May duly arrived and at the appointed time W6CG was heard calling. Nervously I replied, not without typing error because of trembling fingers and was greeted with a 579 report. Following W6CC, contacts were made with K6OWQ (WS6CG's XYL, now also among the silent keys) W0BP and W3PYW at which time propagation deteriorated and the following day was anxiously awaited.

I cannot say printouts were of the quality we expect these days. One of my difficulties was receiver instability, which had not worried me when copying CW or AM phone and another, the QRM from adjacent stations. It did appear that copy at W6CG from me was better than I received from him. This was

evident when comparing his print out (which he mailed to me) with copy this end. More about the problem later.

My temporary F1 permit ran out on 30th June and for a time I was QRT which was a good thing in a way as it enabled me to catch up on many of the chores which had been neglected and it was not until the following year that my thoughts turned once more to amateur RTTY.

Another period of long delays and frustration ensued. The PMG's Department appeared reluctant to issue another permit to enable me to operate F1 officially. I might add as there were occasions when I had contacts, particularly with ZL1WB, who had made an appearance after returning home from the USA where he had acquired a pile of RTTY equipment and was experiencing the same problems in getting official sanction to operate RTTY from the NZ authorities.

It was not until a telephone conversation with an executive of the PMG on another matter entirely, that some explanation was forthcoming regarding the delay in issuing the F1 permit.

His inter-departmental inquiry uncovered the state of affairs in which it was revealed that the department had no objections to the use by amateurs of F1 emissions, but it appeared technical advisers to the WIA had recommended that F1 not be a part of amateur radio and the Department were reluctant to add this mode to the official list. This, of course, explained the 'fobbing off' without reason I had been handed out by the Radio Branch... I might add the reason given by the WIA for not approving F1 was its excessive bandwidth occupancy.

How to overcome this objection? I saw the light. Why not invite the objectors to view a spectrographic illustration of bandwidth occupancy of other modes used by amateurs, AM being the more popular in those days as well as the up and coming SSB and with this in mind, letters were sent off to WIA and PMG inviting representatives to such a demonstration.

The date was set and equipment set up in the laboratory in order to demonstrate bandwidth occupancy on a newly acquired HP spectrograph analyser including that of RTTY which, at that time was operated with an 850 Hz frequency shift. I never did find out why no WIA representatives attended that demonstration, but the two PMG reps were duly impressed when it was shown the sidebands of F1 were considerably narrower than AM.

Eventually, permits were granted and it was about then a couple of other VK amateurs appeared on the scene, VK2EG, Bill and VK4RQ, Chas Noble and in New Zealand, ZL3HJ joined ZL1VB. The continent of Oceania was waking up to RTTY and was very much in demand by the Americans and one or two others who had joined in the fun and games.

I previously mentioned instability of equipment and this appeared to affect most RTTY-ers of the day. My answer to this had been to install 'rubber' crystals in the receiver for the 21 and 14 MHz bands, the latter having been included in our permits. I use the term 'rubber' as this was one used at that time, and possibly still is, to denote a crystal oscillator in a receiver, or for that matter, a transmitter as well in which it is possible to vary the frequency over a restricted range.

The most suitable circuit for this was derived from the Franklin, a form of regenerative concept enabling certain axis cut crystals to be moved about 1 kHz, at the fundamental frequency. Then, by using a crystal in the lower frequency range, the harmonics could be used to provide a tuning range of perhaps 5 or 6 kHz, at the operating frequency.

This was not a complete answer as many of the transmitters in use were prone to drift. Valves were still the norm at that period of time and some fiddling with the tuning was necessary to maintain a QSO. A very ingenious device was developed by VK3PB, who had appeared on the RTTY scene. This was a mechanical unit, motor driven, which coupled to the tuning knob of his Galaxy V transceiver. The direction of the motor was electronically controlled by a form of discriminator in turn operated by two tuning forks resonated above and below the standard mark frequency of 2125 Hz, the action being to develop a positive or negative DC voltage as any change from 2125 Hz occurred in the receiver output. This voltage drove the mini motor in the required direction to retune the receiver. Ingenious to a person looking on.

VK3PB's cunning device set me to thinking again about the drift problem and automatic frequency control. I was not interested in laboriously carving out tuning forks, but why not use a straight out discriminator to provide differential voltages to control a varicap in association with the receiver VFO? A unit was hastily put together and after some minor problems, worked very well, so well actually, that I was sorry I had not thought of it in previous times. This unit was eventually featured in the RTTY Journal and was adopted by many of the Americans who suffered the same problems. In the mid 1960's I was away from home a great deal of the time, including a stint in Europe learning something about what was termed 'telegraph on radio', the forerunner to AMTOR as we know it today, but what a difference in those early valve units as compared to the solid state devices of today. The original TOR complex was housed in two standard seven foot racks, when today one can pack the whole works into a small suitcase. I had no involvement in the amateur sphere for about two years, during which time more and more transistorised devices appeared in amateur items. Among those in the forefront of the hard work involved was K8KDC, later to become W6FFC. His earlier version of the 'Mainline' and TTL demodulators had become the accepted standard of valve operated devices, but in the 1970s his ST-3,4, 5 and 6 solid state versions gained worldwide acclaim and was, or should I say 'is' looked upon as the 'ultimate' amateur demodulator, otherwise, why are so many VK3 amateurs hard at work building the

ST-6 at the time of writing this? Perhaps it is because they have not heard about the TU9-7? Anyway, the TU9-7 was never published and the only unit in captivity is in the shack of VK3KF. During the late 1960s and early '70s I did find a little more time for amateur RTTY and although I had gained the WAC certificate (worked all continents RTTY) as early as 1962, I had not caught up with the swelling number of countries which were appearing and I set about chasing a DXCC on RTTY.

This was not all that difficult as various overseas amateur organisations had introduced world wide contests during which some rare ones would appear to be pounced upon by all and sundry in sometimes hectic' dog piles'. By 1971, I had achieved the objective and have not kept an accurate record since about 74, when I had a listing of 131 countries.

As a measure of early RTTY activity, I recently examined a 'WAC Honour Roll' published in 1965 in which 79 stations were listed and out of curiosity, I checked to see how many or these made the listing by contacting VK3KF for the award and was surprised to find 56 out of the 79 relied on VK3KF for the Oceania continent. I also noted my own listing as Number 23 which agreed with the certificate on the wall. Most of us patiently had to wait until 1962 for Africa to appear when ZS6UR came up on air.

I suppose I have missed a great deal in trying to bring to light some of the early RTTY activities in Australia. Other stories may come to mind later on, but enough for now.

During the years of amateur involvement with RTTY, I must say that I have enjoyed them.

ar

AR on the WEB

Alan Meredith VK2NNN
295 Iodide Street
Broken Hill NSW 2880
vk2nnn@vk2nnn.com
http://www.vk2nnn.com

Aliens on the Bands?

Well no actually all those unusual noises you have been hearing on the bands are probably just VK's out there contesting! While not being everyone's cup of tea, contesting can be a great way of catching up with a few friends that you have not heard from for a while. By the time you read this one of VK's best known contests, the Remembrance Day contest, will have come and gone (VK2 did we win?).

Winter is the season for most of the VK/ZL contests but as we start to approach spring the International contest season begins again in earnest.

There are some excellent Australian contesting resources that will help you find out what's on and when.

Radio Sport, which is run by one of VK's best-known contesters, John VK4EMM, is always a good place to start. http://www.uq.net.au/radiosport/

John has an event calendar of all the major contests as well as hints and tips for the beginner and the experienced alike. The WIA (Wireless Institute of Australia) sponsors quite a few contests throughout the year and information concerning these can be sourced at: http://www.wia.org.au/

For the more serious, or curious amongst us, the International contests can be a great way of snagging a few of those elusive countries. They seem to come out of the woodwork for the big contests! Remember you don't have to enter the contest to get on air and chase a few new ones, of course the competitive spirit might be let out of the bottle....Hi.

Some of the bigger international contesting sites are listed below:

SM3CER Contest Service: http://www.sk3bg.se/contest/

This is a cool site!

WA7BNM Contest Calendar:
http://www.hornucopia.com/contestcal

This is also a cool site with a comprehensive calendar of contests. This site also offers an email subscription service (free), for a weekly newsletter updating the latest contest information.

Even RTTY enthusiasts can get in on the contesting action at: RTTY Contest Calendar - by LA9HW

http://home.sol.no/~janalme/RTTY.html

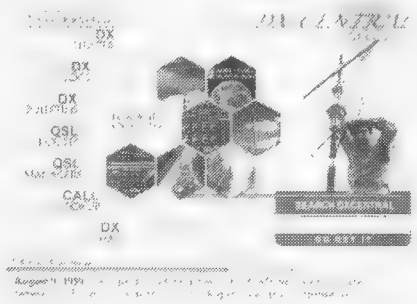
Any listing of contesting information would not be complete without mention of the one of the biggest of them all: Contesting Online:

http://www.contesting.com/

This site has information on almost everything related to contesting ie: Rig comparisons, contesting software reports and comments, discussion groups regarding contest software, contesters shack tours, you name it then its probably here! For the Internet guide to Contesting try the DX-Zone: http://www.dxzone.com

Either getting ready for a contest or trying to figure out exactly what to do after you have finished can be as much work as the contest itself. DX-Central

http://www.dx-central.com/ can help out here with online searchable logs etc to help you find out whether you made it into the log of that DX station and also where to send the card.



Another site is: DX-BANDS.com
http://www.dxbands.com/

Only new, but well worth a look.

Free Lunch? No such thing?

Well some useful things are still free!

Email subscription services can be a great way of getting information, not only for contests but will keep you up to date with all things DX as well. Most offer a free weekly service delivered to you via email, automatically.

Three of the best are:

Ohio Penn DX Bulletin
http://www.en.com/users/k8yse/opdx.html

425DXNews
http://www.425dxn.org/

599 DX Report
http://members.aol.com/the599rpt/dx.htm

The last one may cost you a little (I didn't say everything was free!).

If you are still stuck for a stations QSL address after the contest then try some of the Callsign servers on the Net.

Buckmaster is one of the largest at:
http://www.buck.com

Also QRZ.COM offers another excellent Callsign look up service at:
http://www.qrz.com

Speaking of looking for things, I have been helping to search for ET. SETI@home, http://setiathome.ssl.berkeley.edu/ has been mentioned quite a bit lately. It has been running on my work PC for a while now. It finally finished its first block of data yesterday. It only took 347 hours! Maybe I should talk to the boss about a faster PC? Maybe I want to stay employed!

Anyway, while not at work watching my SETI screensaver crunching data, I have been busy relocating my entire web site. It is now located at http://www.vk2nnn.com and my new email address is a real hard one: vk2nnn@vk2nnn.com So remember if you find something on the Net that's cool, let me know so we can share it..

Speaking of cool, this one has been around a while but is still one of the best propagation sites on the Net. http://dxlc.com/solar/ Well worth a look. Remember, no propagation equals no communication (unless you are QRP with 1500 watts!....Hi).

ar

VHF UHF AN EXPANDING WORLD

Eric Jamieson VK5LP
PO Box 169 Meningie South Australia 5264
E-mail: vk5lp@lm.net.au Fax: 08 8575 1777
Packet: VK5LP@VK5WI.#ADL.#SA.AUS.OC

All times are UTC

Six metres

Ron VK4BRG reports that on 13/7 on SSB he worked at 0812 K6MYC/KH6, 0854 T30JH and 0911 V73JK. All signals relatively weak.

Wal Munn VK2YHN of Ballina sent a Fax to say six metres had been quiet. During June there were two openings - 3/6 to VK3DQJ and VK3DUQ. 4/6: VK7JG and VK3YTT. He hears the VK3SIX beacon almost daily with signals variable but occasionally to S9. Despite calling he receives no answers.

On 12/7 KA0BAD DM57 heard VK4WP calling CQ on 50.125 at approx 1700. From Phil N0KE in DM69 via VK-VHF Reflector.

John Goldfinch VK4FNQ QG39ex at Chartres Towers reports that he uses a Realistic Pro 2006 scanner for TV frequencies (plus offsets) from 45 to 106 MHz and the antenna is a discone. From 50.000 to 50.500 MHz he uses an ICOM IC 505 + Tokyo Hy-Power amp with rx amp and a 9 element h/b Yagi (9 metre boom) at 19 metres.

From 15/2/99 John has been keeping a log of signals from 40.000 to 76.000 MHz and uses a Yaesu FT 847 + 1/4 wave vertical on the roof for this rig. He says:

I haven't been sitting in the shack 24 hours a day but the six metre radio and a scanner scan 24 hours and if I hear noises or I am passing the shack I have a quick look and make notes. For example, I have logged the Darwin beacon VK8VF 19 times. These notes are now on a database.

He sends a very extensive report from which only excerpts can be taken. As has been known for a long time, North Queensland enjoys reception conditions on six metres about which those in the south can only dream.

John's reports show an almost daily consistency of signals to be heard or worked. His listening commences around 40 MHz but it is the area between 45 and 50 MHz where a multitude of video signals exist mainly from countries to our north in the Asian region.

Of course, 49.750 +/- provides the most consistent signals, as is the case in the south where if you are going to hear anything it will usually be on that spot.

Japanese 50 MHz beacons figure prominently in his lists, those heard being JA2IGY 50.009, JA6YBR 50.018, JA1ZYK 50.023, JE7YNQ 50.027, JR0YEE 50.033, JR6YAG 50.037. Signals were often weak but they were there on a regular basis. Another very consistent beacon was V73SIX 50.014.

Australian beacons included VK3SIX 50.053, VK8VF 50.056, VK7RAE 50.057, VK4RGG 50.058, VK2RHV 52.325, and of these VK7RAE was the most consistent, probably being the right distance from Townsville.

Japanese amateur contacts were scattered throughout July with most districts being contacted at some time. Here again signals were quite variable, being from S2 to S9. On many days they came in for awhile from 0600 then faded out only to re-appear around 0900 extending through to 1300 and later.

From time to time a Japanese amateur pile-up filled sections of the band, as only the JAs are able to do! Whilst many JAs were still using 50.110 it was obvious that others were avoiding that frequency with a high degree of success.

Some beacons were heard around 2300 in the morning but these were more the exception than the rule, most appearing from 0600.

John did report almost daily reception of a meteor scatter station in the Philippines on 43.649 MHz with signals varying from S1 to S9, which is interesting.

The following is one day selected from the many provided and is fairly typical of the signals available if you look for them on a regular basis.

13 July

0500 43.649 M/S weak
0500 49.750 Video weak
0500 50.027 JE7YNQ Bcn 519
0655 0555 50.023 JA1ZYK Bcn 519
0740 43.649 M/S weak
0740 49.750 Video S9
0740 50.027 JE7YNQ Bcn 519
0740 50.033 JR0YEE Bcn 319
0740 50.110 JA2IVY Wkd VK4JH 5x9
0830 43.649 M/S S8
1025 43.649 M/S S1
1025 49.750 Video S1
1025 50.009 JA2IGY Bcn 519
1025 50.023 JA1ZYK Bcn 319
1044 50.110 JR2HCB CQ 5x9+
1130 43.649 M/S S1
1130 49.750 Video S5
1130 50.009 JA2IGY Bcn 519
1130 50.014 V73SIX Bcn 419
1130 50.018 JA6YBR Bcn 529
1130 50.023 JA1ZYK Bcn 519
1130 50.037 JR6YAG Bcn 419
1250 43.649 M/S weak
1250 49.750 Video S2
1250 50.009 JA2IGY Bcn 519
1250 50.018 JA6YBR Bcn 519
1250 50.023 JA1ZYK Bcn 319
1250 55.250 Video S7
1250 59.750 Audio weak
1250 61.250 Video S5
1250 65.750 Audio S1
1250 67.250 Video S6
1250 71.750 Audio S1

As stated before, it is obvious that North Queensland enjoys an advantage over southern climes when it comes to propagation. However, for the past month or two I have included some items from David Vitek of Adelaide who logs video and sound from TV transmitters and any other signals which appear, principally in the region 40 to 108 MHz which includes the commercial FM band.

Some entries from his log for part of June indicating there always seems to be something available at least between 45 and 50 MHz.

3/6:

0330 ABMN0 video

0225 45.250/239.60 S5 with rapid flutter

0358 RTQ0 video

0410 ABCN1 video S7

0430 51.761A NEN0 video

0507 62.76A ABSQ1 video

0340 50.110 VK2DN 5x4 and other VK2s; VK2RHV/b, VK2RSY/b 0342-0409 to S7

0435 VK4RGG/b S3

0516 VK4ABP/b S4

0518 4ABCFM Nambour

20/6:

0520 51.67A RTQ0 video

0540 ABSQ1 62.76A video

0529-0712 50.047 VK8RAS/b

28/6:

0702 51.67A RTQ0 video

0706 62.76A ABSQ1 video

0717 51.740 ABMN0 video

0700-0742 49.750 video S3

0724 51.761A NEN0 S3

0747 ABCN1 S4

1055-1200 RTQ0 video

0709-0925 50.047 VK8RAS/b to S8

0810 94.9 8JJJ

0811 97.9 8ABCFM

0812 99.7 8ABCRN, all three in Alice Springs

1139 105.7 4ABCRN Toowoomba. On this day the Indices were F-207, A-20 and K-6.

Ted Collins G4UPS is his monthly report for July 1999 remarks that newcomers to the six metre band must be highly delighted with the DX that has been available so far this year. He writes:

Up to 21 July I worked/heard 72 countries down here in Devon in IO80jv, a far higher total than last year, and picked up two new countries in TZ and VP2E to make my total 148 countries on six metres.

Ted also said that on 4 July hundreds of six metre operators picked up a new country when Jimmy Treybig W6JKV, operating as VP2E/W6JKV had a phenomenal opening into all parts of Europe. At 0944 Jimmy was 559 at Ted's QTH but it took him until 1017 to actually work Jimmy, by then he was 599. His signals were 569 at 1300 and he was still being reported at 1600. There were no signals on 28 MHz.

Ted said that Jimmy must be gifted with much patience as he had to deal with inexperienced operators who insisted on giving him their full locators and who even held up a huge pile of stations by demanding his locator!! A lesson for everyone to learn from that experience.

The Pacific and Japan

Emil Pocock W3EP in *The World Above 50 MHz* in *QST* reported that activity across the Pacific seemed to have wound down a bit (or else it has become too routine to bother reporting). Jack Henry N6XQ, and other Californians found VK4APG and VK4KK on May 21 and 25. Hatsuo Yoshida JA1VOK (PL36), worked AP2WAP in Pakistan on May 2 at 0816 for his fifth new country this year. Japanese also reported XX9TSS (Macao) among their now common run of contacts in the Pacific and East Asia.

Neville VK2QF supplies the following in regard to the C21JH and T30JH expedition.

Summary of prefixes

C21JH: V73, VK8, YB0, VK4, 3D2, AH8, KH7, YF1, YC1, P29. 1,300 QSOs on all bands.

7/7/1999: V73SIX/b from 1935, VK 46.240 video from 2230-2239 to S5, and ZL 45.240-250 video S1, 0012-0016 49.750 to S1.

6\7\1999: V73SIX/b from 2020.

5\7\1999: V73SIX/b from 2000; no VK but ZL video from 2145 to S9+ and all gone by 2250; KH6HME/b 5x1 0820, KH7R 5x1 0852, KH7U 0947 5x1, 0955 and 1045 P29KFS to 5x9; 1240 48.240/250 Malay video, QRT 1320.

From Mike ZL3TIC in RE66:

1 August

2230 46.240 5x9

2345 46.170 5x9

0010 VK3BWT 50.140 5x9

45.240/250/260 5x9, also 55.240/250 and 260 5x9.

0110 57.240 and 260 5x9

0130 ZL1ADP 5x9

0400 Strong backscatter from the 45 MHz TV and 46.170/240.

0730 49.750 up to 5x9 with many offsets.

0811 VK9NS 50.110 5x9 with QSB.

0902 JA1JFK 50.140 5x5

0903 JQ1DPP 50.140 5x7

0908 JA1RJU 50.110 5x5

0908 JR2HCB 50.110 5x7

0909 JA7WSZ 50.140 5x7

0913 JA1VVD 50.140 5x5

0917 JA2POK 50.140 5x7

1030 49.750 still in

Note: *This would be the first time I have ever heard JAs in August.*

From Bob ZL3TY

1 August

VKTV 46.240/51.740 S9

0713 VK2RSY/b 529

0715 VK2FHN 50.150 5x8

0726 VK2YOC 50.150 5x9

0735 VK2FC 50.150 5x9

0748 VK2DN 50.150 5x9

0822 VK4RGG/b 50.057 419

0848 Asian TV 49.750 S6 many carriers, in for 30 minutes.

2 August

0002 VKTV 46.240 S1

0043 VK7RAE/b 50.056 559

0044 VK7JG 50.12 5x7

0048 VK3GRL 50.12 5x9 ZLTV 45.260/50.760 S9

0134 ZL1BIC 50.12 5x5

Its official

John VK4KK has ascertained from the authority of the DXCC Desk of the ARRL in Connecticut, USA, that J88 Belau is not a new DXCC country and will not become one, nor become a deleted country. The same applies to Hong Kong. In each case you are only working a new prefix.

Rod VK2TWR advises:

Good to see a touch of troppo from my QTH at Nimmitabel. I worked Joe VK7JG on 2 m and 70 cm at 5x7 both ways on 23/7 at 0745. Caught up with Andrew VK7XR an hour and a half later. This would have been the peak, as Andrew's signals were 5x9 on 2 m; unfortunately 70 cm was not achievable, as Andrew was having problems with his transceiver. Band stayed open until around 1050. Beacons were not there next morning.

Microwaves

Wally VK6KZ is making his annual pilgrimage to the east coast and on the way he and Neil VK2EI have been playing 10 and 24 GHz again. Wally said that they were able to extend the NSW distance record on 10 GHz with a 319 km contact. Neil was portable at North Brother (Lat 31 39 29S Long 152 46 21E) and Wally VK6KZ/p was at the Rotary Lookout at Ballina (Lat 28 51 51S Long 153 35 22E). Neil gave a 4x2 report and received 4x1. The contact was made between 0615 and 0647 on 3/8/99.

An attempt to extend this distance on

the following day from North Brother to Cape Byron was unsuccessful. Attempts to extend the Australian distance record on 24 GHz were unsuccessful.

The Indian Ocean

Brian VK3BCZ, formerly VK5TN writes as follows:

Your July reprint of Emil Pocock's article on the VHF records held by Paul Liebe KH6HME reminded me of the 1960s when I lived in VK5. KH6HME as well as the VK5s were inspired by the record breaking contact on 144 MHz by KH6UK/ W6NLZ across the northern Pacific in 1957.

I am not sure when in the early 60s it was, but I personally took note of the Irish Gentleman (VK5ZDR) when he first worked from Adelaide to Melbourne on 432 MHz by noting from the weather maps appearing nightly on television when the High was located so that the wanted radio path would be across the middle of the High.

In those years, I was working adjacent to radio researchers and advising them of the amateur observations of sporadic E occurrences to supplement investigations they were making on the E and F layers.

I then became aware of their interest in long range tropospheric propagation (via subsidence inversions in the High pressure weather system). It was in those years that the VK5s obtained the first licence in Australia for an unattended beacon station on Mount Lofty.

It turned out that the 144 MHz beacon was ideally suited for warning of openings across the Great Australian Bight to Albany and beyond. For many years, the professional and amateur observations have been done in parallel, the amateurs, of course, have the advantage of having a wider geographical distribution.

My reason for responding to the recent article is that I took the trouble to read Emil Pocock's article in March 1996 QST on *"Transoceanic ducting at VHF and above"*, only to find him suggesting that very much longer paths might be possible across the Indian Ocean via the Reunion High.

This is exactly what I tried to say back in 1969 by means of an article in Pierce Healey's amateur radio page in Radio Television and Hobbies. At the time, I had compared the Weather Bureau's Indian Ocean pressure charts with the temperature inversion heights obtained from the radiosonde observations then taken at Carnarvon in WA. Initially I recommended monitoring a beacon in Salisbury, Rhodesia, but subsequent work showed that the limit of the oceanic high would be Madagascar.

It is now apparent that the amateurs in Perth and along the WA coast have not yet worked to Madagascar. Now is a good time of the year to once again see if there are stations in Madagascar willing and able to work to WA on 144 and higher frequencies. My work in the 60s showed that it should be possible on a few days per month. Emil Pocock suggests that meteorologically speaking, August might be the best month. Success would double the present records held by the Americans. Who will be the first to conquer the Indian Ocean? Perhaps a trophy is needed as has been offered in respect of the Atlantic Ocean. [See later in these notes for a reference to such a trophy.]

EME News

From Ron VK3AFW:

Just after midnight on 6/7 Des VK3CY, worked K3VGX on 144 MHz CW. This is a good effort because both stations use only 4 Yagis. Des has an AM17 and the other station a PA with 3 dB or so more output power. Another grid square for Des!

But it doesn't stop there. Des VK3CY continues to enjoy success with his AM17 and 4 Yagi's. On 10/7 he gave up golf to work two DLs and OZ1HNE on 144 MHz. He also heard his own echoes on several occasions.

Also, Des worked his first JA on 2 m plus two other initials bringing his tally to 12 this last weekend, 17-18/7.

I also heard his tape (audio coupled for record and replay) of a random QSO with W5UN. It was like 20 m without the QRM, 559 as heard in my shack off Des's rebroadcast. No dropouts, just clean crisp CW. He gave Des 54N. It was just after moonrise. I heard Des's "K" echo at the start of the tape. It was at least 539.

So, if you have an AM17 and at least one long yagi, W5UN and a couple of others can be worked. If you have a 4x array with 8 m+ booms you are in the swim.

Living out of town helps as the noise floor in the big cities is horrible. A clear shot to the horizon to make use of ground gain or an AzEl mount is essential.

ATV World Record Notification

Three new ATV world records are registered this summer by the Swiss ATV:

5.7 GHz: 216 km, 15/6/1999

One-way QSO between TK2SHF and F/HB9RXV/p B5 TK2SHF (JN42hf), 15 W, 90 cm offset parabola F/HB9RXV/p JN33kq.

10 GHz: 1031 km 17/6/1999 at 0730

EA/F1AAM/p (IM98XU, Monte Pego, Spain, 220 m) and I5/HB9AFO/p (JN54bc), Rifugio Carrara, Italy, 1320 m). Bi-directional B3-B5 QSO. F1AAM: DRO + 12 W TOP, 1 meter offset parabola. HB9AFO: DRO + 12 W TOP, 1 meter offset parabola, modified LNB + narrow band receiver + home made wide band receiver with automatic research of stations.

47 GHz: 188 km 30/7/1999 at 0630

HB9DLH-F1JSR, one-way B5 QSO. HB9DLH: at Mont Chasseral BE (JN37md), at 1550 m 90 cm modified offset parabola. TX 10 mW on 47.088 GHz. F1JSR: at Mont du Chat (dpt 73, JN25vq) 90 cm modified offset parabola. Phonie transverter NF 9 db + sat converter, sat pointer, TV sat receiver (narrow band).

You can find all details and pictures on the SWISS ATV web site: (in French and in English) http://www.cmo.ch/swissatv

From Michel Vonlanthen HB9AFO, Swiss ATV president.

End of an era

With the November 1999 issue I will have completed 30 years of writing these notes for *Amateur Radio*. I now believe it is time to call it a day so my last official columns will cease with the December issue. David VK5KK will take over the helm and continue the columns.

Commencing with the October issue David will provide a segment of information in my notes and this will continue to the December issue, when I will have more to say in my closing columns. Therefore I need to say no more at this moment as I do not wish to repeat myself.

At David's request, I will provide something for the January 2000 issue so as to "have one foot into the year 2000" as he puts it! David will commence his full version of the columns with the

January issue while I will provide a separate summary of my 30 years of writings in the same month. To this the Editor has agreed.

Profile: David Minchin VK5KK

David is one of a family of amateur radio operators. Father Keith VK5AKM, brothers Tim VK5NTM and Hans VK5NME.

I commenced contacts with Keith in 1963 on six and two metres. Keith lives at Wasleys, north of Adelaide, and at a distance of about 56 km, over very rugged terrain, from my then location at Forreston in the Adelaide Hills. Yet, for some reason still unknown to us, it was an excellent VHF path, and contacts could be maintained on both bands using power levels as low as 30 milliwatts!

David first came to my radio notice when at times he would take the microphone from his father and have words with me. I encouraged him to take an interest in amateur radio and particularly VHF. He responded and whilst still at High School passed his examinations in both theory and Morse code to obtain a full call (VK5KK) at the first attempt.

So, in the mid-1970s began almost nightly contacts, usually cross-band, with signals so strong between us that others had difficulty in breaking into the conversations. On occasions we reduced our power levels to such a low state that others could not hear us! We eventually found that 432 MHz worked the same way, always S9+ if we wanted it to be so! Regular contacts continued until 1987 when I left the Hills for Meningie.

Over the years I have seen David extend dramatically his technical knowledge with the result that he now operates on all bands from 50 MHz to 10 GHz and is moving on to 24 GHz. He has the ability to design equipment for any band and many VKs are using his techniques when assembling their own VHF/UHF equipment.

From a personal viewpoint it has been a pleasurable experience to know David. Over the years he has climbed my towers and maintained my antennas - I freeze if I climb higher than about 5 metres! - and we have continuously shared technical experiences. It has also been great to meet and know members of his family to the extent that a continuing spirit of friendship exists between us.

On several occasions when I was confined to hospital, David filled in and prepared my columns. I feel he will be a worthy successor to me and there is no one I would like better to do the job. I wish him well and ask that those who have supported me with information so loyally over the years will continue to do the same with David.

Spanning the Indian Ocean

I note comments on the above by Brian VK3BCZ. The VHF path across the Indian Ocean from Australia to Africa or the shorter path to Madagascar or Reunion Island has so far eluded any attempts to make a two-way contact on 144 MHz.

As a parting gesture from leaving the VHF writing scene, I am prepared to offer a suitably engraved trophy to the first Australian amateur who successfully completes a two-way terrestrial contact from mainland Australia, to Madagascar or Africa, on 144 MHz. Some details will need to be worked out but number one should be that both sides of the contact must be audio-taped as proof of the contact. The approximate distance from Perth to Madagascar is 6912 km and Durban on the coast of South Africa 7886 km, which would be a world record. Reunion Island is about 6500 km. More later after I give it more thought. VK5LP.

Closure

By the time you read these notes we will be entering the equinox. There is always the possibility that F2 propagation will appear, certainly I would be surprised if eastern seaboard stations don't work to the USA.

As always, it is a case of being aware that 50 MHz can open for long distance contacts. Ten years ago the latter part of 1989 provided contacts to Europe. We may be a year early but one can never be sure.

Closing with two thoughts for the month:

1. If dogs could talk, they wouldn't make such good friends, and
2. One proven way to teach your children to count is to give them different allowances.

73 from The Voice by the Lake.

AT

SNIPPETS

Look out for lightning!

Benjamin Franklin's famous experiment with a kite was an attempt to prove that lightning rods would protect from lightning by attracting it elsewhere.

He intended to experiment on a church steeple but it was not yet built, leaving Franklin to a more resourceful means — the kite.

Having proven that lightning rods worked, the entrepreneurs moved in advertising parasols with built in lightning rod and trailing cable and the "*Chapeau paratonnerre*" or anti-lightning hat for ladies that also boasted a wire spike on top and a trailing wire.

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AMSAT AUSTRALIA

Bill Magnusson VK3JT
RMB 1627 Milawa Vic. 3678
Email: vk3jt@amsat.org

Let's review the scene at the moment..

The two questions most prominent on everyone's lips as I write this column are,

1 **How much longer will we have amateur radio operations from the MIR Space Station?**

2 **When will Phase 3D be in operation?**

Important as they are, both questions are difficult to answer. The first may well be decided by the time you read this in September.

MIR

The latest breaking news as I key this into my WP suggests that the current MIR crew is making 'last-minute' preparations to leave and that MIR will be put into some kind of sleep-mode for an indefinite period of time. What happens next is anyone's guess.

Miles Mann and others have been valiantly trying to get some definite news on the future of amateur radio operations on MIR and disseminating it ASAP on the ANS bulletins and in other media. Trouble is that no-one really knows, or if someone does, they aren't saying, what the immediate future holds for MIR itself.

Wild stories have been circulating in the world media about the imminent demise of the 'doomed' space station etc. I guess this is par for the course. It seems the only way to grip the public imagination is to suggest that some disaster is about to befall us.

We have heard stories saying that MIR's life may be extended by the intervention of a "White Knight" with lots of money. That one seems to have fallen flat. We have heard that MIR will be supplied with enough fuel to enable it to be kept under control whilst it is unoccupied for up to six (or more) months. We have heard that a last freighter will be sent up carrying enough fuel to send MIR splashing down under control into the Pacific ocean.

We have heard that this may not happen and MIR will come down, out of control in some random location and wreak havoc on re-entry. The SkyLab experience tells us that this would indeed be a situation to be avoided. MIR is certainly large enough to ensure that huge chunks of it would survive re-entry.... and so the stories go on.

We can be reasonable sure that when the current crew come home we will see the last in a long saga of amateur radio operations on MIR. A saga that has given great impetus to amateur radio satellite operations and unparalleled publicity to amateur radio itself.

The whole AMSAT scene owes a huge amount to the Russian cosmonauts of the past several years and their travelling companions in space.

How fortunate we are that one of our own, Andy Thomas, VK5MIR was among the most active of all the travellers on the space station.

Many of the current AMSAT devotees would have had their first experience of space radio contacts via MIR. An untold number of school children have had a taste of space communications and an introduction to space science. Our own Maggie (Rita) Iaquinto, VK3CFI was a pioneer in this aspect of MIR operations from her home in Colac in country Victoria. Whatever the fate of MIR and its amateur radio component and however the current uncertain situation turns out, two things will remain.

MIR operations will be sadly missed by the world-wide amateur community and the tradition will continue into the International Space Station with the ARISS project.

Phase 3D

The second question regarding the launch and commissioning of phase 3D is also largely not under our (the amateur community's) control.

We are as always in the hands of the launcher. Word is that a launch within a month or two is on the cards but realistically the final launch opportunity will be decided by the other passengers on the launch rocket.

P3D will give AMSAT affairs an enormous and much needed boost. It will really be a satellite for everyone. As the latest launch opportunity is fast approaching, I'll try to devote next month's column to a complete update on P3D including the latest projected frequency and mode schedule.

It's definitely time to start tooling-up for this next exciting phase of AMSAT activity.

Instant Track

Having dealt with those two, a third very common question also comes to mind.

The ubiquitous InstantTrack program will not as it stands, work properly after December 31, 1999. This situation will be rectified later in the year.

An updated version is complete and undergoing testing as I write this. It will be published in plenty of time for the transition to 2000.

ar

NATIONAL COORDINATOR:
Graham Ratcliff VK5AGR
Email: vk5agr@AMSAT.org

AMSAT AUSTRALIA NET:
The AMSAT-Australia net is held on 80 or 40 meters LSB (Lower Side Band) each Sunday evening (except over the Christmas/New Year period). During the winter months in South Australia (end of March until the end of October) the net is on 3.685 MHz +/- QRM with an official start time 1000utc with early check-ins at 0945utc. During the summer months when daylight saving is in operation in South Australia (end of October until end of March) the net is on 7.068 MHz +/- QRM with an official start time of 0900utc with early check-ins at 0845utc. The times and frequencies have been chosen as the best compromise for an Australia-wide net taking into consideration seasonal propagation changes and the various state summer time variations.

AMSAT AUSTRALIA NEWSLETTER AND SOFTWARE SERVICE:
The newsletter is published monthly by Graham VK5AGR. Subscription is $30 for Australia, $35 for New Zealand and $40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:
AMSAT Australia
GPO Box 2141
Adelaide SA 5001

KEPLERIAN ELEMENTS.
Current keps are available from the Internet by accessing the AMSAT FTP site, ftp.AMSAT.org and following the sub-directories to "KEPS".

REPEATER LINK

Will McGhie VK6UU
21 Waterloo Cr Lesmurdie 6076
VK6UU@VK6BBR
will2@omen.net.au
– (08) 9291 7165 –

LIPDs

I must admit I did not see that LIPDs, Low interference potential devices, would be much of a problem on our 70cm band. These devices are very low power (25mW) and with only limited antennas attached to the hand-helds we could live with any interference that might come our way.

However, when part of the LIPD band was chosen to coincide with some of our voice repeater inputs it is asking for trouble. Even 25mW will go long way when you have a voice repeater's receiver connected to a high gain antenna located in a prime high location listening for the weakest signals. If the LIPD band had been on our voice repeater outputs then we would not have the problem but the LIPD users would have the problem.

What is of real concern is recent developments in VK4. A conversation with Rod VK4ARN the repeater manager of a 70cm/6m/29MHz licensed gateway system, reported deliberate interference from LIPD operation on the input to the 70cm repeater.

The activity was deliberate according to Rod, as the CTCSS tone access was turned on by the LIPD user to key up the 29MHz gateway transmitter. Along with playing music via the linked repeater/gateway system, the interference had caused Rod to turn off the 70cm system.

The 70cm repeater is now back on air with the 70cm repeater's frequencies reversed. Rod tells me this was the recommendation from QTAC and has the approval from the ACA.

I did not foresee this type of deliberate targeted interference. The LIPD users must have a knowledge of the amateur band and the type of use it is put to. Perhaps this is an isolated situation but with LIPD usage in the 70cm band in its early stages it does not look good.

Who would have thought a few years back that we would have seen yet another CB band on yet another amateur band. We lost 27MHz to CB activity and now part of 70cm is under considerable threat. Along with the near wall to wall pirate activity on 28 to 29.7 MHz what band is next?

To further complicate the situation in VK4, a number of the 70cm repeaters in VK4 have been shown not to be on the correct repeater frequencies. The repeaters are on non-voice repeater frequency pairs. Be this as it may LIPDs are a real problem for repeater managers. There are some options, none of which are easy.

The first is CTCSS access only to the repeater input. Makes it difficult for amateur users who don't have CTCSS on their rigs and may only partially solve the problem due to LIPD equipment having CTCSS capability anyway.

The second is to reverse the repeater's input/output frequencies. This is an expense in time money and effort by the repeater manager but would cause the interference to the LIPD user. It would also be a potential means of promoting amateur radio. LIPD users would hear amateur activity and may learn more about our hobby.

The third option is to abandon this portion of the 70cm band to LIPD operation. If we do this could we then see even more of the 70cm band occupied by LIPDs?

VK-Repeaters

The mail server VK-repeaters on the Internet sure has taken off, with a number of topics being discussed. I must admit I have had little time to join in but have monitored the discussions.

Topics so far have shown some degree of misunderstanding of the regulations for starters. Other topics include audio quality on linked systems, the novice filter problem on links, 6 metre repeater locations, a request for information on an Australian built pager transmitter from an American amateur, availability of dual band mobile antennas, to the question, "*Does the WIA liaison team monitor the mail server*?" The answer to the last question is yes, some do, including FTAC.

Not bad for a new mail server only a few weeks old. The Internet location, http://wwww.onelist.com/index.html. Look for VK-repeaters.

Corrections

While on the subject of the mail server, VK-repeaters, attention has been drawn to the errors on the ACA web page in relation to voice repeaters and the linking of said repeaters. Comments on the page relating to the maximum number of repeaters allowed to be linked and in band linking (off air linking), I believe, are in error. The relevant part is:

"Repeater Cross-Linking

Amateur groups may be granted approval to permanently cross-link repeater stations subject to the following requirements:

1. Linking should not be carried out in the same Amateur band or in bands below 50 MHz.
2. Cross-linking up to a maximum of three repeaters will be allowed. This restriction does not apply in the case of links for 'packet' repeaters."

Regulation 1 excludes in band (off air linking) and regulation 2 limits the maximum number of repeaters to be linked to three.

You might think, "well so what a couple of errors on the web page", but this is the information the ACA area offices read when determining what we are allowed to do. Your application can be rejected on this incorrect information alone.

Attempts so far to correct this information have been unsuccessful.

I have no idea why

ar

Repairs on VK3RGV Mt Wombat
Photo submitted by M.Mitchell VK3HMM

ARDF

Ron Graham VK4BRGPO
Box 323Sarina Qld 4737

Last column we talked about simple ARDF equipment. In this column we will move ahead to what I call the ARDF converter; also often called an attenuator, ultimate attenuator etc. Reference has been made in the last, and in previous columns to this device and the fact that it overcomes some of the limitations with using a handy talkie for ARDF.

Handy Talkie Limitations

In review, most limitations are essentially cause by poor shielding around the front end of the receiver section. This allows a strong signal, which is the case when close to the hidden transmitter, to enter the receiver directly and not via the antenna. So, as we are using the antenna to obtain the required directional information, but the signal isn't arriving via the antenna, we thus have no directional information!

ARDF Converter

As the name somewhat implies, this device is basically a frequency converter. It shifts the input, or hidden transmitter, frequency by a small amount. Thus the handy talkie (HT) is not tuned to the actual hidden transmitter, but to the offset frequency determined by the converter.

Provided the converter is well shielded, and as the handy talkie is no longer tuned to the actual transmitter frequency, the strong transmitter signal is essentially, no longer a problem. The offset frequency, which is in effect the oscillator frequency used in the ARDF converter, is generally quite small. A frequency of 500 kHz. or 1 MHz. is often chosen.

A frequency converter consists of two essential elements:

a) the oscillator section referred to above, the frequency of which determines the converter's actual frequency change.

b) the mixer section, which mixes the input signal from the antenna with the oscillator signal to produce both the sum and the difference of the two. Normally, just one of these output frequencies is required and that is achieved by tuned circuits on that particular frequency; in this case, the HT.

The Attenuator Aspect

With a frequency converter the output signal level depends, up to a maximum value, essentially on the input signal level and the oscillator signal level. So, if either the input signal or the oscillator signal levels are reduced, the output signal (to the HT) is also reduced. By fitting a control to adjust the oscillator output (or level) we have an effective attenuator incorporated into the ARDF converter.

Typical Circuit Arrangements

The ARDF converter consists of two essential sections, an oscillator and a mixer, mounted in a well shielded enclosure.

If the battery (power source) is also fitted into the shielded enclosure, this obviates the possibility of signals entering via that route.

There is much room for variation and experimentation with the type/frequency of the oscillator section and various mixer designs.

The oscillator frequency needs some consideration:

a) the tuning range of your handy talkie (HT) .. if it tunes out of band with good sensitivity.

b) consider proposed HT receiver frequency and the image frequency to ensure that there are no strong local signals, local repeater for example, on those frequencies.

An oscillator frequency is typically between 0.5 and 5 MHz., with 1 MHz being a good choice. This allows you to simply add or subtract 1 MHz. (depending which side of the oscillator frequency you wish to use) to the HT's indicated frequency in order to determine the hidden transmitter frequency.

Crystal control, free running and even variable oscillators are possibilities. Crystals tend to be expensive below 2 to 3 MHz, so this may be a limiting factor.

For example, if we have a hidden transmitter frequency of 145.3 MHz (as per the Australian Band Plan for ARDF) and an oscillator frequency of 1 MHz., the HT may be tuned to either 144.3 or 146.3 MHz. If we have, say a crystal controlled oscillator at 4 MHz, the HT would need to be tuned to 141.3 or 149.3 MHz., which is fine if your HT tunes out of band, but not usable if it doesn't.

Some form of control, as previously mentioned, is needed to adjust the oscillator output. This becomes the attenuator control.

The mixer section may range from a simple as a 1N4148 diode to a commercial double balanced mixer module.

Controls etc. on an ARDF converter will be the attenuator control, a battery on - off switch, a coax socket connected to the input of the mixer stage (signal input) and a coax socket connected to the output of the mixer stage (signal output).

The ARDF Converter in Use

The input of the converter is connected to your directional ARDF antenna. The converter output is connected to the HT antenna socket. Both these cables, are naturally coax, for shielding purposes.

As per the previous example, assuming a hidden transmitter of 145.3 MHz and an oscillator frequency of 1 MHz., the HT may be tuned to either 144.3 or 146.3 MHz. Set the attenuator for maximum sensitivity and you should hear the signal.

If a free running oscillator is used in the ARDF converter, it may be necessary to tune a little either side with the HT tuning in order to "find" the signal.

Now, unless your HT has a signal strength meter, because of the inbuilt limiting action of the FM HT, it is necessary to adjust the attenuator so the signal is slightly noisy. This is so that limiting action doesn't mask the effects of signal variations as you turn the antenna looking for the direction of maximum signal.

Advantages of the ARDF Converter

a) a relatively inexpensive way to overcome the poor input shielding of the average HT or scanner.

continues next page

ARDF

Disadvantages of the ARDF Converter

a) the converter has a reasonably high signal attenuation even at maximum sensitivity. This generally means that you will not hear weak signals at the start of an ARDF event. The solution is to use the HT connected directly to the directional antenna at this stage. The ARDF converter is fitted "in line" when you get closer to the source of the signal. At that stage, you may wish to use the attenuator function or the poor HT shielding is becoming a problem.

b) if you inadvertently press the transmit button of the HT, you may burn out the mixer diode. With HT's that have adjustable TX output power, set the power level to the minimum. Also, consider a thin metal cover bent to a suitable shape so as to cover the PTT button. This cover may be simply taped in position.

c) adds another piece of equipment and associated cables to be carried.

ar

'It hit me like a ton of bricks'

Rob Seaman VK6TRC
robert@shannon.wow.aust.com

We all see the signs "please turn off transmitting devices" at construction and medical sites and understand the consequences of a stray transmission "pushing the red button". Here a member does a little DFing to find a potential danger point.

Just a message to let you all know of a recent interference problem with one of our local 70cm repeaters, VK6RTH, situated at Tic Hill, approx 30kms NE of Perth City on 433.225/438.225MHz.

The problem started about 3 weeks ago, the end of July, 1999 when the repeater was returned to service, after being off-air for about 2 weeks due to an antenna change.

The interference was a data/telemetry type signal on the repeater-input frequency (433.225MHz). The signal appeared at all hours of the day, evening and at night, at random times and transmissions lasted anywhere from several hours to less than 30 seconds.

The interference appeared "slightly mobile" as from time to time it would momentarily dropout of the repeater, then come up again, resetting the time out timer and causing transmissions on the repeater for extended transmissions.

Work commitments prevented me from getting onto the problem for about a fortnight, but I eventually heard the interference first hand, about 4.00am in the morning one day last week, after I left the handheld on the bedside table and forgot to turn it off before going to bed!

Anyway, after about 45 minutes I wasn't able to get back to sleep and the interference was still there. I knew that if I didn't get up and take the opportunity to do some DF'ing, that when I eventually had some spare time the interference wouldn't be heard!

I undertook some DF-ing using a simple 6 element Yagi and ended up at one of Perth's major brick manufacturers, about 5 km away from the repeater site. I found my way into the premises by following the 6am start workers cars into the yard. I was able to narrow the interference down to one of the large factory sheds on the premises.

I returned home and contacted the ACA later that morning with my complaint. They called me back in the afternoon, on site, from the brickworks for clarification on which shed I believed the interference was originating from, because unfortunately at that time, the transmissions had ceased!

The ACA and electrical staff from the company couldn't come up with any likely sources. The transmissions commenced again briefly whilst they were on site, but didn't stay on air long enough to be found!

The ACA put me in contact with the Electrical Shift Supervisor at the company as the interference was occurring at random times day & night and the ACA were restricted to working daytime, Monday to Friday, whilst the brick company worked 24hrs/7 days a week.

The interference continued to appear and early this morning (Sunday, 15/8/99) it reappeared and I was in a position to attend the brickworks and do some further DF'ing. I met with the Electrical Shift Supervisor and the interference was finally tracked down to a handheld remote control unit that was used to operate a large overhead crane in the workshop.

The crane is designed to lift & move several tonnes. The unit was about the size of an older style HT, with a small antenna fitted to the top, an arrangement of buttons on the front and a large battery pack on the rear. There was no sign of a type approval number or TX frequency on the unit. The unit was tested next to my receiver and immediately when it was powered up, the transmissions commenced, even though no commands were being sent to the crane.

I explained to the Electrical Shift Supervisor the possibility that legitimate, licensed transmissions could cause havoc or worse, an industrial accident on the frequency they were using. He immediately replaced the wireless remote with a wired remote unit and stated that they used several other similar remote control units on other cranes in their operations.

I will be advising the local ACA office & the Electrical Supervisor at the company of the cause of the interference tomorrow morning. I intend to also take the matter up further with the local WIA Division through the WA Repeater Group, who is the repeater licensee. I will have it made known to the Federal WIA as well as Worksafe WA (The statutory Occupational Health & Safety authority).

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CONTESTS

Ian Godsil VK3DID
57 Nepean Highway, Aspendale 3195

Contest Calendar September - November 1999

Sep 4/5	All Asia DX Contest	(Phone)	(May 99)
Sep 4/5	Bulgarian DX Contest	(CW)	(Aug 99)
Sep 5	Panama Anniversary Contest	(SSB)	(Aug 99)
Sep 11/12	Worked All Europe DX Contest	(Phone)	(Jul 99)
Sep 18/19	SAC DX CW		(Aug 99)
Sep 25	Internet CW Sprint Contest		
Sep 25/26	SAC DX Phone		(Aug 99)
Sep 25/26	CQ WW RTTY DX Contest		(Aug 99)
Oct 2/3	VK/ZL/Oceania DX Contest		(Aug 99)
Oct 3	RSGB 21/28 MHz Contest	(SSB)	(Aug 99)
Oct 9	Ten-Ten Int. Day Sprint	(CW/SSB/RTTY)	
Oct 9/10	VK/ZL/Oceania DX Contest	(Aug 99)	
Oct 16/17	JARTS WW RTTY Contest	(Sep 99)	
Oct 16/17	Worked All Germany Contest	(CW/SSB)	(sep 99)
Oct 17	Asia-Pacific Sprint	(CW)	(Jan 99)
Oct 17	RSGB 21/28 MHz Contest	(CW)	(Aug 99)
Oct 30/31	CQ WW DX Contest	(SSB)	(Sep 99)
Nov 1/7	HA QRP Contest	(CW)	
Nov 6/7	Ukrainian DX Contest	(CW/SSB)	
Nov 7	High Speed CW Club Contest	(Jan 99)	
Nov 12/14	Japan Int. DX Contest	(SSB)	
Nov 13/14	WAE RTTY Contest	(Sep 99)	
Nov 13	ALARA Contest	(CW/SSB)	(Sep 99)
Nov 13/14	OK/OM DX Contest	(CW)	
Nov 20/21	LZ DX Contest	(CW)	
Nov 27/28	CQ WW DX Contest	(CW)	(Sep 99)

Chatham Islands ZL4IR/ZL7 operation

From: Ed Hartz K8VIR/ZL4IR

I will be making numerous trips to the Chatham Islands over the next 18 months. A special QSL will be sent commemorating the next millennium (Chatham Islands will see the first sunrise of the next century).
The QSL card also gives recognition to "Old Blue", a Chatham Islands hero.
Main Frequencies will be 18.130, 24.950, 28.550, 21.260 and 14.260 MHz ± QRM.
All QSL's direct to my manager. Bill Coale, W8WC.

In July something very strange happened, in that about half of what I believe I sent for printing did not make it. I do not know why, but I suppose it was something that I did. However, I do accept full responsibility for the distress caused to several readers and can only offer my sincere apologies that the Remembrance Day Rules in particular were omitted.

To redress the omission I sent immediately to the Federal and State Divisions copies of the Rules and an item for broadcast. In this way I hoped that those who needed a copy of the Rules would be able to get them in plenty of time. So to those who wrote and asked for copies, thanks and I hope that you were ready in time. To those who pointed out my unsuitability for the task of Contest Co-ordinator, thank you also.

In the case of some results also omitted, I re-present them below.

Meanwhile, good contesting and 73 de Ian VK3DID

Thanks this month to S5OU JE1CKA VK3DMS

RESULTS JIDX 1998
(Call\band\score\award)

VK2XT	28	2106	
VK4DZ	28	988	
VK2APK	14	14194	plaque
VK4BDX	7	26404	plaque

RESULTS CQ/RJ WW RTTY WPX 1999

(Call\cat\score\award)

VK6GOM	SOABH	386880	plaque
VK4UC	SOABL	412720	plaque
VK2KM	SB15	70007	highest VK2
VK6WR	SB20	78010	highest VK6
VK2BQS	SB20	481	highest VK2

JARTS WW RTTY Contest

16 - 17 October 1999

0000z Sat - 2400z Sun

BANDS: 80 - 10 metres (no WARC). MODE: Baudot only. CATEGORIES: Single operator all bands; multi-operator all bands (multi-tx permitted); SWL all bands. EXCHANGE: RST+operator's age (00 acceptable for YLs). Multi-operator stations must send 99 as operator age.
SCORE: two points for QSOs within own continent; three points for QSOs outside own continent. MULTIPLIER: (a) each DXCC country except JA/W/VE/VK

mainland; (b) each call area in JA/W/VE/VK. Count each multiplier once per band.
FINAL SCORE is total QSO points X total multipliers. LOGS to contain band; date; time; callsign; exchanges; multipliers; points claimed. Any entry with more than 200 QSOs must submit a DUPE sheet.
Use SEPARATE logs for each band. SUMMARY SHEET to show name; address; category; claimed score. Multi-operators list names and callsigns of all operators.
SEND LOGS by mail to:
JARTS Contest Manager, Hiroshi Aihara JH1BIH, 1-29 Honcho, 4
SHIKI, Saitama 353-0004, JAPAN
by 30 December 1999.

ALARA Contest

Sat 13 November, 1999

0001z - 2359z

OBJECT: Open to all licensed operators, YLs work anyone, OMs and Clubs work YLs only. BANDS: 80 - 10 m (no WARC).

SUGGESTED FREQUENCIES:

28.380 - 28.410 MHz; 21.170 - 21.200 MHz; 21.380 - 21.410 MHz; 14.250 - 14.280 MHz; 7.070 - 7.100 MHz; 3.560 - 3.590 MHz.

MODES: CW; SSB. Note: CW is very much encouraged, but please keep it within the suggested frequencies.

CATEGORIES: CW; SSB; MIXED; SWL.

CALL: Phone "CQ ALARA CONTEST"; CW: YLs call "CQ TEST ALARA"; OMs call "CQ YL". EXCHANGE: RS(T) plus serial number starting at 001; name; whether ALARA member or Club station. Note: Stations may be re-worked on the same band and mode after an interval exceeding one hour. No net, list, crossmode or crossband operations permitted.

SCORE: CW/Phone - five points for ALARA member contacted; four points for YL non-member contacted; three points for OM/Club contact. On CW, QSO where one operator is a Novice, score DOUBLE points.

LOGS to show date; time UTC; band; mode; callsign worked; exchange; name of station worked; whether Club; points claimed. Logs may be single entry, except Australian YLs entering for the Florence McKenzie CW Trophy should use separate CW log. Show name, address, callsign of operator, points claimed. Contest Manager's decision will be final.

SEND LOGS by 31 December, 1999, to: Mrs. Marilyn Syme VK3DMS,
99 Magnolia Avenue, Mildura, 3500, Australia.

Various CERTIFICATES will be awarded.

WAE RTTY Contest

13-14 November, 1999

0000z Sat - 0000z Sun

Only 36 hours of operation are permitted and breaks may be taken as one period or no more than periods.
BANDS: 80 - 10 m with minimum time on band of 15 minutes.
MODE: Baudot (RTTY) only.
CATEGORIES: Single operator all bands; multi-operator single tx; SWL. DX cluster support is permitted.
EXCHANGE: RS(T) plus serial number starting at 001. Stations may be worked once only per band.
SCORE one point for each QSO and one point for each QTC reported to another station not on your continent. MULTIPLIER is each DXCC/WAE country counted once only per band. MULTIPLIER BONUS: each multiplier on 80 m is multiplied by 4; on 40 m by three and on 20/15/10 by two.
FINAL SCORE is total QSO + QTC points X total multipliers.
Use SEPARATE LOGS for each band, showing band changes and duplicates. Supply DUPE SHEET if more than 100 QSOs on any band.
SEND LOGS by 15 December, 1999, to:
WAEDC Contest Committee,
Duererring 7, PO Box 1126,
D-74370 Serheim, Germany.
Logs may be sent by e-mail to: waedc@compuserve.com in plain ASCII with Summary Sheet.

CQ WW DX Contest

SSB: 30/31 October 1999

CW: 27/28 November 1999

0000z Sat - 2400z Sun

OBJECT: For amateurs around the world to contact other amateurs in as many zones and countries as possible.
BANDS: 160 - 10 metres (no WARC).
CATEGORIES: Single operator single band/multi-band; high power (100w +); low power (100w -); QRP (max 5 w o/p); assisted (full power + use of spotting nets permitted). Multi-operator all bands single tx (only one tx and one band permitted during any 10 minute period from first QSO on that band); multi-tx but only one signal per band.
EXCHANGE: RS(T) plus CQ zone.
MULTIPLIERS: Each different zone and country contacted per band. WAZ, DXCC and WAE lists, WAC boundaries are standards. Stations may contact their own country and zone for multiplier credit but zero points.
SCORE three points for contacts between stations on different continents.
FINAL SCORE is total QSO points X zone and country multipliers.
LOGS must show time UTC; exchanges; multiplier FIRST time worked on each band; checked for duplicates and correct scores. Separate log for each band. SUMMARY SHEET should show name and address in block letters; all scoring information; category and signed declaration. All entrants should submit cross-check sheets.
SEND LOGS on paper or 3.5 inch disk in CT.BIN or N6TR.DAT format by 1 December (SSB) or 15 January (CW) to:
CQ Magazine,
76 North Broadway,
Hicksville, NY 11801, USA.
Various AWARDS available.

Worked All Germany Contest

16/17 October 1999

1500z Sat - 1500z Sun

BANDS: 80 - 10 metres (no WARC).
MODES: CW; SSB.
CATEGORIES: Single Operator all bands CW; single operator all bands mixed; single operator all bands mixed QRP (max 5w o/p); multi-operator single tx; SWL. DX cluster support is permitted for all categories. EXCHANGE: RS(T) plus serial number. German stations will send RS(T) plus DOK code.
Stations may be worked only once per band.
SCORE three points for local QSO and five points for DX QSO.
MULTIPLIER is number of German districts worked (max 26 per band), plus each country counts one multiplier per band regardless of mode. FINAL SCORE is total QSO points X total multipliers from all bands. Various AWARDS available.
LOGS should show time UTC; exchanges; duplicate contacts.
SUMMARY SHEET and multiplier check list should show name; address; category; points claimed.
SEND LOGS by mail or 3.5 inch disk in ASCII format to:
Klaus Voigt DL1DTL,
PO Box 120937
D-01010 Dresden, Germany,
by 30 November.

Amateur Radio Questionnaire

Bob Harper VK4KNH

BACK IN 1995 there was a survey of amateurs taken to gauge the acceptance of AR and to review the content requirements of the readers. I was not involved with AR then and so feel that I can review those results without any calls of a "pre-wind-up".

The reason for doing this is to make you aware that another survey will be held within the next few months and to encourage you to have your say.

You see back in 1995 there were 5026 surveys sent out and 394 received back which is about a 7.8% return. 10% is considered a good return by many bodies who do such surveys but wouldn't it be nice to get at least a third of the members interested?

In fact it is rather risky making changes based on a small percentage like this, as it is also commonly recognised that in many organisations about 5% are considered the "fringe element". Fringe elements often tend to be more vocal than the other members are.

The main cause for concern with surveys is the make-up of the sample taken. Does it really represent a fair cross section of the amateur radio community and the wishes of the average member? For this reason, well-designed surveys try to identify the person, not by name, but by membership of subsets of the community being surveyed. This can set off alarm bells with members as they feel their privacy is being challenged and they then refuse to send their survey back.

Please understand that there is a purpose, a genuine need, for each question asked and that names will not be listed against the replies you offer. The only reason for asking for your name and callsign is to identify that you are indeed a member and not voting twice.

The sample may inadvertently be made up of mainly one section and almost without others sections at all. If you belong to a particular interest group you would not want the majority voting to remove you groups item from AR. Take the ATV group as an example. Currently there is no column on ATV and therefore when asked, "Should there be more ATV in AR?" the only possible answer should be yes. No doubt we would get some non-ATV people saying no but how should the survey determine the real wishes of the members in such a conflict?

There are two possible ways: -

1) Read the results and make a gut feeling decision -not very scientific and very prone to personal bias. The other problem is the decision-maker will almost certainly be challenged whatever the decision.
2) Identify the members of the sample who are also members of the sub-group. Then calculate the percentage of those members who want more (or less) ATV content and compare that against non-ATV members. If this is compared to those who identify with the most popular sub-groups, technical articles for example, and a benchmark can be set. It still comes down to a human decision but with far more defendable criteria.

Ultimately I believe that AR should have something for everybody without monopolising the space for any one interest. There is one great advantage to having a wide selection of content and that is that all readers have a chance to become interested in one more facet of AR perhaps as interest in another facet fades. ***PLEASE! Send Your Survey Responses.*** Your input will help define the content of AR for the next few years at least.

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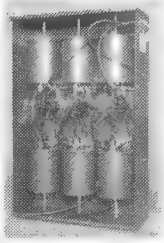
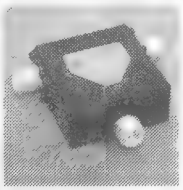

Radio and
Communications
Incorporating AMATEUR RADIO ACTION and CB ACTION

Edited by
Chris Edmondson, VK3CE/4
PO Box 123,
Eagle Heights,
Queensland 4271
ph (07) 5545 0666
fax (07) 5545 0622

Okay, so what are these gadgets? Simple. They're The Answer — the answer to that most curly of problems, **intermodulation**. RF guru **Ron Bertrand, VK2DQ** — well known for his excellent series of AOCP instructional videos — tackles the nasty old intermod problem, and explains it and its cures in simple, understandable English.

So what does our September issue hold in store for you? How about these...?

- CONTESTS — all about the VK/ZL/O Contest. Come on, give it a try! And check the calendar...
- THE RFDS STORY — Steve Ireland, VK6VZ, makes the pilgrimage to Alice Springs. Join him!
- REPEATERS — the very latest listing of Australian amateur repeaters... all states, all bands!
- REVIEW — Icom IC-R2. How can something so small do such a lot? Check out Icom's baby...
- WIA NEWS — Yes, we know you get it *here*, but now there's more of it in R&C too!
- *As usual, we have our DX columns, mods and lots more... the best stories and regulars every month!*

Don't miss out — **RADIO and COMMUNICATIONS** is great reading for amateurs!

Check your local newsagent today!

(PS. We also have the biggest collection of radio-oriented Classified adverts in the country. There's lots of them because they *work* so well. Ask your newsagent to keep a copy for you each month. Hurry — you might *miss* something!)

vk3ce

POUNDING BRASS

Steve P Smith
9 Peak Street
Bateau Bay NSW 2261
02 4334 7743

I recently came across an interesting article in relation to restoring telegraph keys, some keys such as the standard American J-38 series having a black plastic looking base, these bases are actually "Black Phenolic". This material can be purchased and easily cut to the required size depending on the size of your key base. Further information can be obtained from the following company:

Lee Valley Tools Ltd
1090 Morrison Drive
Ottawa Ontaria K2H1C2
Canada

Give them a call in regards to prices etc as this information was not available at the time of writing.

A very interesting book (to be released in August this year) is an in depth study on the clinical use of Morse code in the education and rehabilitation of people with disabilities. Released by Allyn & Bacon USA, ISBN is 0-205-28751-4.

Written by Dr Thomas W King, Professor & Clinical Supervisor, Department of Communication Disorders, of the University of Wisconsin, the book has taken a number of years to produce.

I look forward in doing a review of this book as soon as one is obtained.

To our German readers, a new club has just recently been formed "Deutscher Telegrafie Club" named "DTC" or "DL-CW-c" for short. The club is devoted entirely to the continued use of Morse Telegraphy on the Amateur Bands. DTC also offers radio amateurs a number of easy to work awards to promote CW activity, for readers with internet access further information can be obtained from the following: http://www.muenster.org/dtc/eindex.html or you can write to-

DTC c/o Thomas Koenig
DG6YFY, Secretary,
Rincklakeweg 43,
D-48153 Muenster
GERMANY

Also from Germany the "AGCW-DL". The German "Actiivity Group Telegraphy" has a new web page in both English & German that can be found from the following http://www.qsl.net/agcw

The Radio Society of Austria OVSV has decided to create a specific section for telegraphy within the society called:

"The First Austrian Telegraphy Interest Group" or OE-CW-G for short. Its aims are to promote CW activity and techniques, to establish contacts & create friendship with radio amateurs from around the world. Further information can be obtained from the following:

Georg Csapo, OE4CSK
Nueberg 346
7535- St Michael
AUSTRIA

With all these groups and societies starting up it looks like Morse telegraphy will be around well into the next century, despite the doom and gloom and the lowering of Morse standard by certain countries.

News from America. Ralph Taggart WB8DQT has recently released a new version of his CW software program: version 8.0 is now available. The program offers ways of improving both sending and receiving with a wealth of other information plus support pages if problems are encountered. Ralph's web site is: http://taggaert.glg.msu.edu/wb8dqt/cwpage.htm well worth a visit.

That's all the current overseas news I have to report for this month. Hope to see you on the bands soon. VK4SPS

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Learn Morse — run the railroad

On the subject of Morse we thought that this 1902 Sears and Roebuck advertisement was of interest. By learning telegraphy you can get to run the railroad.
The price of the set is also interesting, $1.65 in a monthly wage of $50 equates to about $100 today.

TELEGRAPH INSTRUMENTS.
To those who are about to start in life, either ladies or gentlemen, there is nothing at the present time which offers better inducements than telegraphy. The smallest salaries paid are about $35.00 per month, but the salaries usually paid are from $50.00 to $125.00 per month and many even get much more. Besides, the only inducements are not the salary alone, for it opens the way to other and more expansive fields of work.
A large number of the high officials of railroad companies who command salaries from $15,000.00 to $50,000.00 per year started as telegraph operators. Thomas A. Edison, the wonderful inventor, who owns over 600 patents and is immensely wealthy, began as a telegraph operator.
Those who are not familiar with telegraphy are liable to believe that it is something mysterious and difficult to learn, but this is a mistake. It is very easy to learn, can be thoroughly mastered in from two to six months, and with a reasonable amount of care and application it can be learned at home and after a little experience the practice can be made very interesting by constructing a short line between two or more houses, which can be done at a very small expense; all that is necessary is to carefully follow the instructions laid down in the instruction book.
Our Complete Learner's Telegraph Outfit.
PRICE $1.65
BATTERY
MANUAL OF TELEGRAPHY
No. 20R4415
For $1.65 we furnish a LEARNER'S COMPLETE TELEGRAPH OUTFIT, consisting of key and sounder, working battery, wire and Manual of Telegraphy (a complete instruction book), a regular $5.00 outfit. Use this outfit, follow the instructions and you will soon become a telegraph operator. Positions are open for operators on railroads everywhere at $40.00 to $60.00 per month.

SILENT KEY

Darrel Hunziker VK2BHD

Darrel Hunziker VK2BHD was listed as a silent key last July. With permission from Darrel's family I would like to expand on a few facts about Darrel's life. Darrel was born 14th December, 1930.

"Yes Darrel speaking" was how he answered the phone. You knew he was ready to listen, be encouraging, and ready to offer sound advice. Darrel Hunziker was a friendly man, who treated everyone with honour and respect, and in turn was loved and respected by all who knew him.

Darrel grew up in Taree where his faith was nurtured in the Methodist church and developed in the Order of Knights. A school teacher by profession, he was a gifted lay preacher and served as Sunday school superintendent, as an Elder, a member of the parish council, and as a chairperson of the Maclean congregation. Darrel also took part in church concerts, often devising and appearing in skits, enjoying the fun and fellowship of these social occasions.

Darrel was Maths master of Maclean High School. He had to retire many years ago because of bad health, which he had suffered from for 25 years.

In the community, he was a member of the Maclean Probus club, a helper of the disabled, and a member of the heart support group.

As an amateur radio enthusiast, Darrel enjoyed communicating with other Hams across the world. Darrel first became a Ham about 1960 when he resided in Taree.

He died on Wednesday 7th April at the age of 68 years. Darrel is missed as a wonderful friend, neighbour and fellow Ham.

Yours in Radio
John Rowland VK2AHR

John Francis Anderson VK3JA

Jack"s many friends will be saddened to hear of his passing on 23rd February 1999. He was on the CW net 2 days before entering hospital.

Jack was born on January 14th 1914 at Warrnambool. He attended the Warrnambool Technical School. Fellow students with an interest in radio were Les Kermond VK3DX and Russ Coulson VK4MA. Les was licensed in 1928 as a 15 year old, Jack followed in 19th August 1930 as a 16 year old.

He moved from the potato farm at Southern Cross to Nullawarre where he helped clear the bush on his block. He married Mavis in 1940 and they started dairying.

Jack was a director of the Warrnambool Cheese and Butter Factory for 31 years,much of that time as chairman of directors. An elder of his church and Sunday School teacher, he was highly respected in this district. During the Ash Wednesday fires of 1983, he had the misfortune to lose his daughter-in-law and grandson.

During the war, the authorities sealed Jack's gear- that was the only period in 69 years that Jack's station was inactive. With good operating, helped by his trusty "V" beams, Jack attained the goal of budding DX'ers- the DXCC Roll of Honour, Open Section. His fist will be missed from the CW bands.

Our sympathy is extended to Mavis and their children Judith, Marjorie, John and Max.

(Contributor not named)

INTRUDER WATCH

Gordon Loveday VK4KAL
F.I.W.C.
VK4KAL@VK4JEM
Fax/Ph 07 4985 4168

On re-reading the August edition of Amateur Radio mag, I'm wondering how many AM Transmitters have been pulled out of cupboards, dusted off & tested on air. Or did every-one pull theirs to pieces at the advent of SSB. There should be enough talent available to re-build a couple of valves (for preference) into a good rig to help beat these illegal operations we are hearing from our North, or have all those operators who "cut their teeth" on AM forgot how to build a simple transmitter & put it on air?? This could be a new worthwhile experience, to help the monitoring service, without filling in an observation log! Let us have a go!

The summary for July is not quite as long as last month, however I have only given the general intrusions, not the R7B or B9W modes, these are beyond the average amateur to make any sense of, hence a waste of listening time. I wish to stress the importance of including signal strengths to all observations. I am not a mind reader. If you feel unsure of SINPO, use QSA, at least it gives an idea of how the signal was heard.

Some observers are experiencing spurious products from 7.105 to 7.150

So to the Summary

Freq	Date	UTC	EMM	Details
3.560		1907	1105	A3E R.Korea, 200 kw, Poss ID
7.098		1907	1025	A3E YJD R.Indonesia OK ID
14.0018		1607	0950	A3C UiFAX, drum sp 120 rpm @ CF
14.0025		2607	0920	xxx UiBUZZ, 0.5 sec pulse int'mit
14.0032		1607	0950	A3C UiFAX,drum sp 120rpm
14.1065		2307	0530	A1A UiCW,calls JC2S
14.110		0107	0516	A1A UiCW, L calls 3VOA de W8GS
14.117		1507	0648	F1B UiVFT,cont,nil Hz & Bds
14.2115		2907	0623	F1B UiRTTY, 850 hz/112 bds, RDL. CIS
18.077		2907	0306	J3E UiBC, CB type op, nil c/sign
18.150		1807	1039	A3E UiFone Patch, YL op, non amat.
28.650		1907	2215	A3E R.Habana, H3/9550 Cuba ID OK.

SPOTLIGHT on SWLing

by Robin L. Harwood VK7RH
5 Helen Street, Newstead Tasmania 7250
(03) 6344 2324
E-mail: robroy@tassie.net.au

Well, Spring has arrived and already the higher frequencies have packed up after their winter hibernation, particularly after Sunset. As you are aware, there has been a reduction in the number of broadcasting periods from four to two. Despite that, some broadcasters are still going to make changes on the first Sunday of this month, although the bulk of the alterations will be on the last Sunday of October at 0100 UTC.

A number of international broadcasters have made co-operative agreements to share facilities of late. There is a very interesting one between Merlin Communications in the UK, The Christian Science Publishing Society (HBS) in Boston, Mass, USA and Radio Taiwan International in Taipei.

The HBS used to broadcast from their Saipan transmitters that are now owned by the US Government. HBS programs will be fed to the Merlin Centre in London and then fed via the Internet to Taiwan. Programs from Taipei will be also fed via the Internet to Merlin and then via the Skelton relay on shortwave for Europe.

Details of the HBS broadcasts from Taiwan facilities are as follows:0900-1000 on 11725 to the Far East and Northern China1000-1100 on 11840 to South China1300-1400 on 11725 to IndiaThese transmissions are multi-lingual, including English. The transmission via Skelton for Radio Taiwan has been reported on 6175 kHz but the audio quality from the Internet is very poor. The time is 1900 to 2000 UTC.(EDXP)

Another broadcaster to enter into a co-operative agreement with the Taiwanese is Radio Portugal. The target area is the former Portuguese colony of East Timor, which had a referendum last month to decide its future, under UN auspices. It is being well heard here in Australia on 11550 kHz between 1000 and 1100 UTC. Radio Portugal (RDP) is also on 17740 in parallel continuing to 1400 UTC. The 11550 kHz channel relays the American religious broadcaster, WYFR in Chinese and Indonesian at 1100. WYFR also relays Radio Taiwan International to the Americas and Europe.

This year also is the 60th anniversary of our own Radio Australia. It commenced not long after hostilities broke out in the Second World War. Although still broadcasting on short wave, more emphasis is now placed on co-operative agreements with local domestic broadcasters.

Don't forget that Radio St Helena will be again activated on October 23 from 1900 to 2300 UTC. It will be using a disused utility sender of Cable & Wireless on 11092.5 kHz on USB. They say it will be the final transmission before the sender is placed in the island's museum yet it seems to re-appear every second year. I have not had much luck hearing it but now that I have a permanent antenna, this year I do hope to finally hear it.The final transmission of Morse from US maritime HF networks, took place on July 12 at 2359 UTC. The station, WCC, commenced operation in 1904 near Cape Cod, Mass. For many years, listeners assumed the transmitters were still there but it emerges that they are in fact located in Maryland, just near Washington DC. Although Morse may have disappeared, Globe Wireless, the operators are continuing to use the callsigns on their SITOR/ CLOVER markers. It looks as if WCC may indeed chalk up its centenary, unlike the Dutch station, PCH, Schevingen Radio, which closed down on the last day of 1998.

In conclusion, I would like to acknowledge help from the Bob Padula's Electronic DX Press (EDXP), the World Utility Network (WUN) and QNews.

73 and good monitoring,

ar

SILENT KEY

Ivor Stafford VK3XB

Ivor was born in Foster, Victoria on 3 December 1912 and passed away on 22 May 1999 at the Valley Private Hospital, Mulgrave surrounded by his loving family. Ivor had been ill for some time but still managed to take a daily walk and work a little DX right up to the time of his death. As a young boy he showed considerable academic ability and went on to qualify as a Primary School teacher. He also engaged in his hobby of amateur radio, operating from country Victoria.

With the advent of war Ivor enlisted in 1939 and spent the next six years as a communications specialist in the RAAF, rising to the rank of sergeant. After the war he returned to teaching and renewed his interest in amateur radio. He also found time to qualify as a Melbourne University graduate in both Arts and Education.

Most of Ivor's married life was spent at Box Hill South. It was during the war that Ivor had married Mavis, who also took up amateur radio, becoming one of Australia's most successful operators and an active administrator of ALARA. Ivor himself was particularly successful in DX and commemorative day competitions. He was the first Australian operator to gain the USACA certificate by contacting Stateside novices on 40 m. - no mean feat in itself. Like Mavis VK3KS, he held a First Class CW Operator's Certificate and was noted for his high standard of radio operation. He was most solicitous about such standards and behaviour on the bands, this characteristic being clearly reflected in his own skill and operating technique.

After moving into the Cumberland View Retirement Village at Wheelers Hill Ivor was suddenly severely restricted in his radio operation. This restriction became for Ivor a challenge in itself. Despite having been obliged to erect the most inconspicuous of wire antennas no more than a few centimetres from the sloping roof of their unit, he went on to work the DXCC and what is more, all QRP, but that was the nature of the man.

Also a member ISSB Club, he always gave as much time as he could to the Old Timer's Club and the WIA, of which he was an honorary Life Member. Old Timers will remember that Ivor was for many years the WIA Outwards QSL Manager, a task that he carried out as meticulously as he did all of his activities including gardening and landscape painting.

Ivor will be very sadly missed by his family of three children, Lyn, Geoff and Russ and his six grandchildren. The burden of grief will be even greater for Mavis, his partner with whom he shared a loving relationship spanning nearly sixty years.

Rest in peace, Ivor.

Ken Matchett VK3TL

HF PREDICTIONS

by Evan Jarman VK3ANI
34 Alandale Court, Blackburn Vic 3130

September 1999
T index: 133

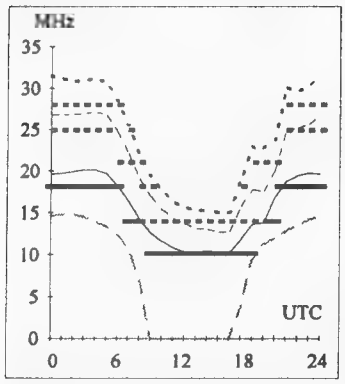
These graphs show the predicted diurnal variation of key frequencies for the nominated circuits. These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

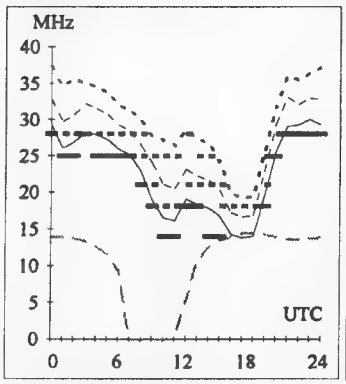
Shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

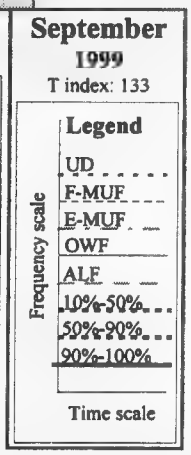
These predictions were made with the Ionospheric Prediction Service program: ASAPS version 4.

Adelaide-Anchorage 30
First F 0-5 Short 12466 km

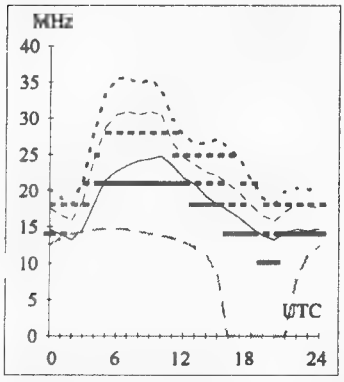


Brisbane-Lima 122
First F 0-5 Short 13056 km

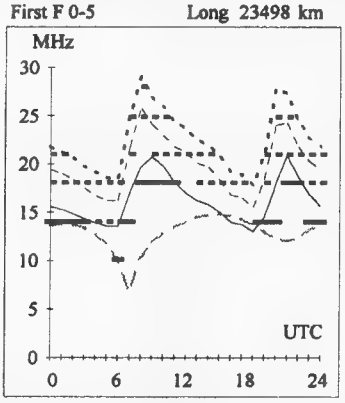




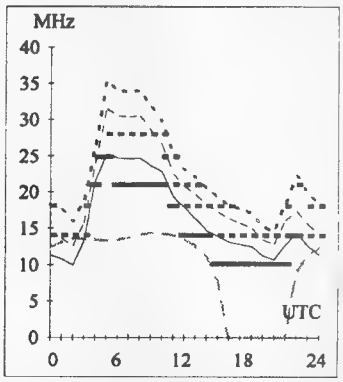
Adelaide-Budapest 305
First F 0-5 Short 14908 km



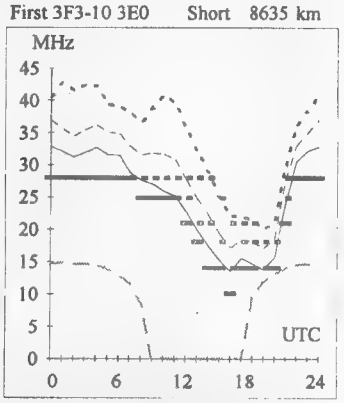
Brisbane-London 147
First F 0-5 Long 23498 km



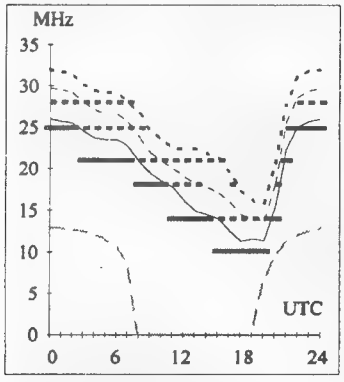
Canberra-Lusaka 239
Second 4F3-6 4E0 Short 11620 km



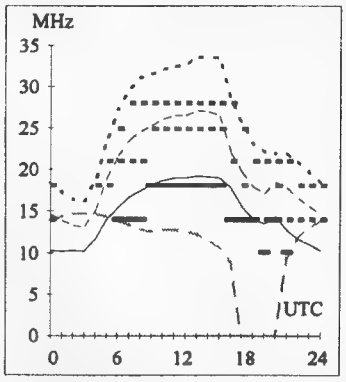
Darwin-Honolulu 65
First 3F3-10 3E0 Short 8635 km



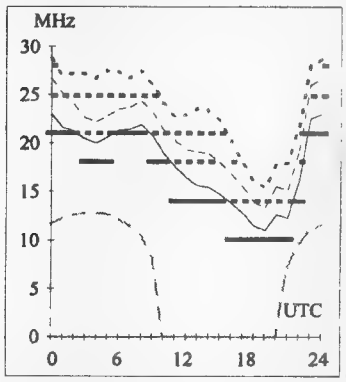
Adelaide-Suva 75
First 2F8-12 2E0 Short 4340 km



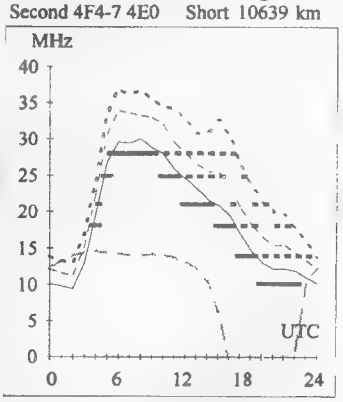
Brisbane-London 327
First F 0-5 Short 16526 km



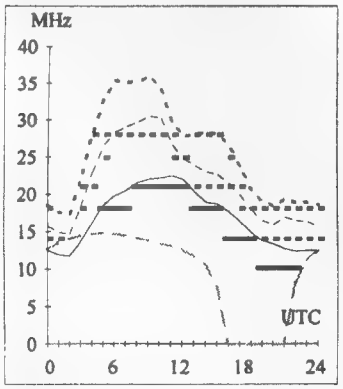
Canberra-Manila 327
Second 3F8-16 3E0 Short 6286 km



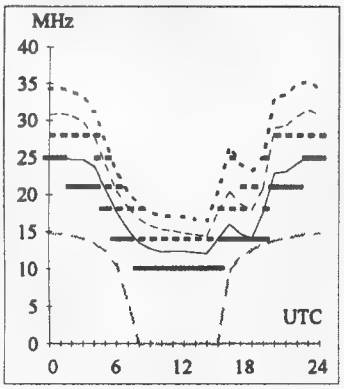
Darwin-Johannesburg 241
Second 4F4-7 4E0 Short 10639 km



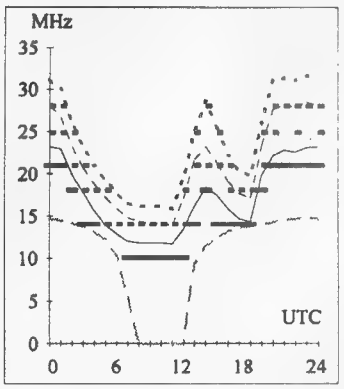
Adelaide-Warsaw 312
First F 0-5 Short 14818 km



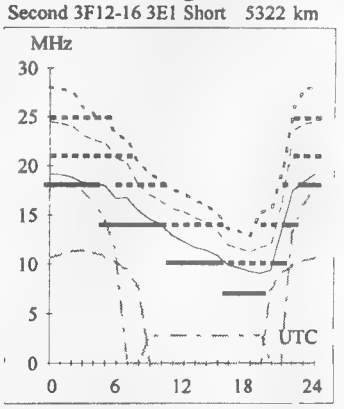
Brisbane-Seattle 44
Second 4F3-7 4E0 Short 11845 km



Canberra-Ottawa 59
First F 0-5 Short 16100 km

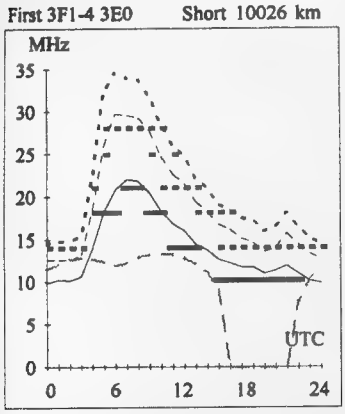


Darwin-Wellington 135
Second 3F12-16 3E1 Short 5322 km

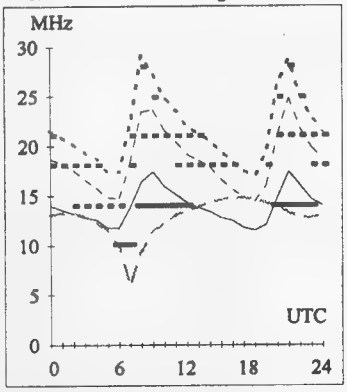


HF Predictions

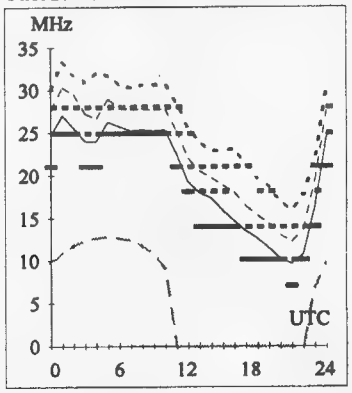
Hobart-Capetown 220
First 3F1-4 3E0 Short 10026 km



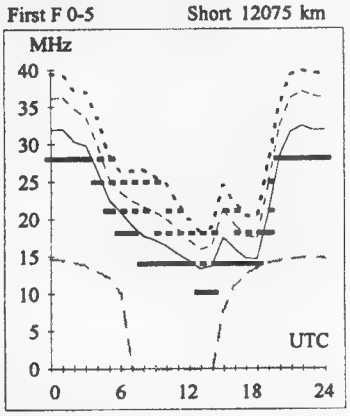
Melbourne-London 131
First F 0-5 Long 23118 km



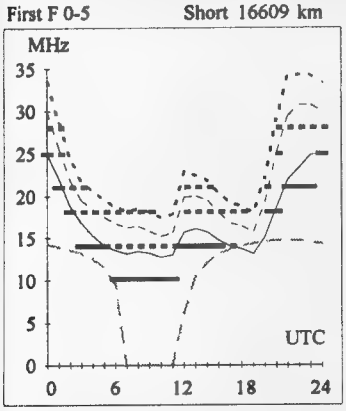
Perth-Kuala Lumpar 336
First 2F8-15 2E0 Short 4179 km



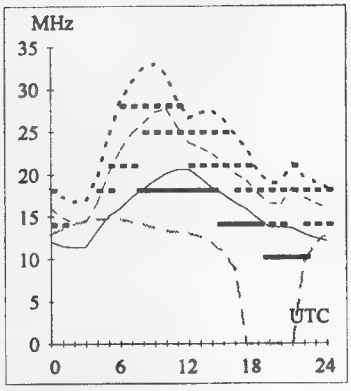
Sydney-Los Angeles 61
First F 0-5 Short 12075 km



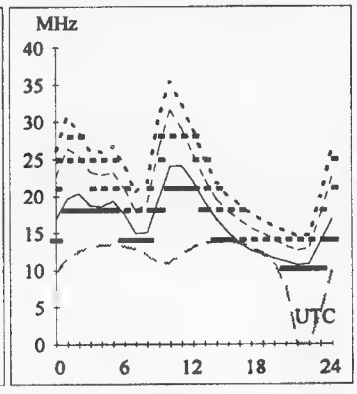
Hobart-New York 80
First F 0-5 Short 16609 km



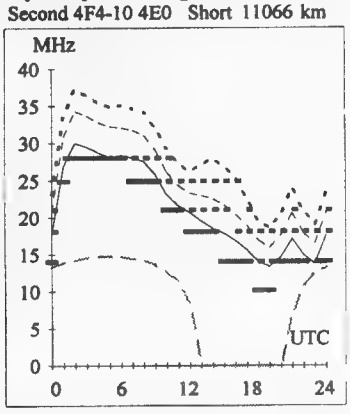
Melbourne-London 311
First F 0-5 Short 16906 km



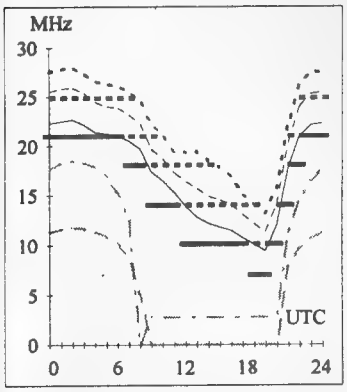
Perth-Rio de Janeiro 203
First F 0-5 Short 13523 km



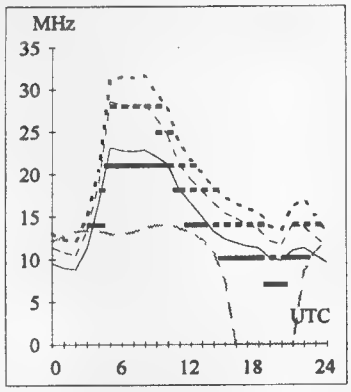
Sydney-Rawalpindi 304
Second 4F4-10 4E0 Short 11066 km



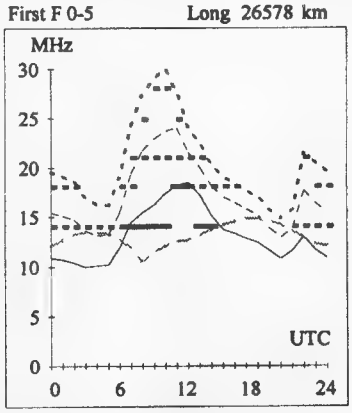
Hobart-Port Moresby 360
Second 2F11-15 2E1 Short 3710 km



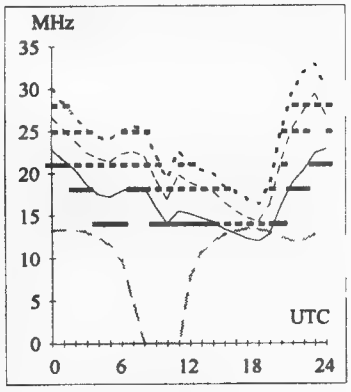
Melbourne-Pretoria 234
Second 4F5-8 4E0 Short 10353 km



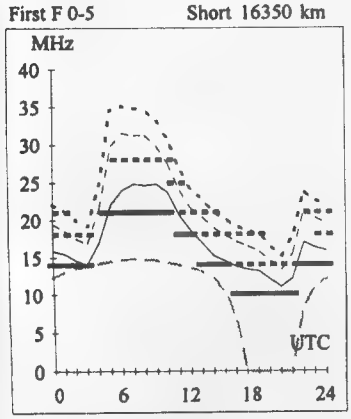
Perth-Stockholm 144
First F 0-5 Long 26578 km



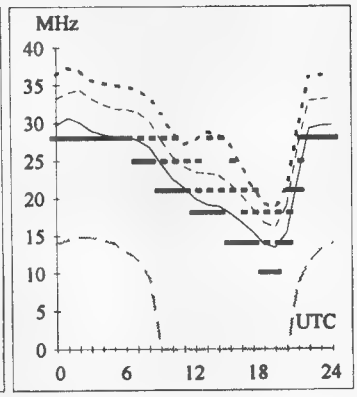
Sydney-Santiago 145
Second 4F3-6 4E0 Short 11347 km



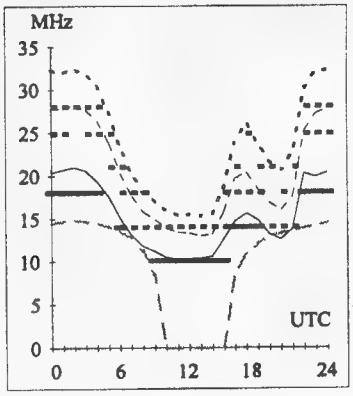
Hobart-Rome 284
First F 0-5 Short 16350 km



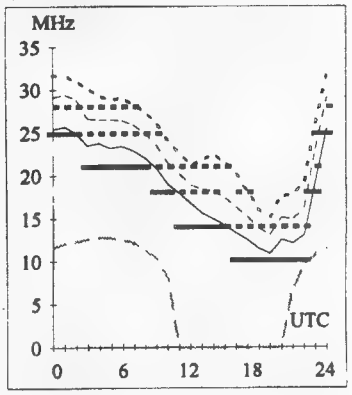
Melbourne-Tokyo 356
First 3F4-9 3E0 Short 8191 km



Perth-Vancouver 50
First F 0-5 Short 14823 km



Sydney-Singapore 298
Second 3F8-14 3E0 Short 6296 km



HAMADS

- Hamads may be submitted on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Postal: *Newsletters Unlimited, 29 Tanner Street, Richmond, 3121*
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Please only send your Hamad once

Please send Hamads by mail OR fax OR email (much preferred).

Please do not send by more than one method for any one ad or issue, it is confusing.

WANTED NSW

• **Copy of handbook** and circuit for YAESU Active Antenna FRA-7700. Will pay photocopy & postage costs. Bill Crossland VK2TPW. PO Box 334 Ballina NSW 2478.

• **Cathode ray tube** type 3AP1 will buy or swap 2metre rig Ray VK2AWQ 026494 1347

• **Valve receivers.** Military, commercial, heavy or not, junked busted or alive, parts, manuals, etc. Will pay if necessary. Specialise in Lifting Receivers over 40kgs!! Part of Radio Weight Lifting Team! Mad B40 collector!! Call John WIA L210628 on (02) 95336261.

• **6M linear amplifier** - AWA test set MTS-A210 handbook or circuit - Ray VK2FW QTHR Phone a.m. (02) 6365 3410.

• **Manual for Cam Metric** Ltd Portable Wheatstone Bridge Catalogue No.7383. Copy OK. Will pay costs. Malcolm VK2BMS Phone (02) 92574583 b/h.

• **6M transceiver** or a transverter to suit a FT101. VK2ZVJ 02 4443 2277 or brownsarre@fastrac.net.au.l

• **Philips FM92** in good working order. 2M modification preferred. Ben VK2HVS (02) 43251190.

• **Down East model 2335PA** 1.2GHz 35W solid state power amplifier. Art VK2AS (02) 9416 7784. Email astowar@telstra.easymail.com.au

WANTED - VIC

• **Circuit for General Radio Bridge** Type 1656. Contact VK3XAQ (03) 98987559 a.h.

• **Yaesu FT-736R options**, such as 1.2GHz module, CTCSS board, or even a complete (but broken) FT-736. Please call Chris VK6KCH/3 on 0417 988 970 or 03 5333 6490 (Ballarat).

• **Linear amp 144MHz** all mode 200W plus. Photocopy of service manual for ICOM IC271 2M all mode. Info on any internet site for ICOM gear this era. Jim VK3AEF (03) 5391 3045 QTHR.

WANTED - QLD

• **Instructions, owners manual**, universal antenna coupler HC-500 Tokyo Hy-Power LABS (older model). Will pay copying fees, postage, etc. HENRY HF linear amplifier 4K ultra or similar 3-500z tubes preferred. John Abbott VK4SKY (0417) 410503 or PO Box 1166 Coolangatta 4225 QLD.

WANTED - SA

• **Output transformer 4000 OHM** primary 8 or 15 OHM secondary alternatively 5000 OHM primary with 8 or 15 OHM secondary. Preferably Rola 8 OHM preferred. QTHR (08) 8294 6906.

• **Micronta 22-202B** Multimeter Operators Instructions, also 0-25 amp meter to fit 70mm hole. Must be in good condition. Paul VK5MAP QTHR Phone/fax (08) 86512398.

WANTED - TAS

• **Owners manual** for Kenwood R2000 receiver or copy. Will pay costs. VK7TNP P.Denne (03) 62279158. 12/2 Coolamon Road Taroona Tas 7053.

• **No.11(Aust.) Military radio**, WWII vintage (not working is OK). Call Brian (03) 62295888.

WANTED - NT

• **Tentec Delta 580** transreceiver, any condition for use/spares in particular Relay one, part no. 32007 - Hamlin relay HE 551c50818, or address/ tel for Tentec Aus agent.. Jim VK8KV QTHR tel 0889450661 or 0418896757

FOR SALE - ACT

• **Philips FM900** 2 Metre with Motorola Power Supply and long remote cable. $125 ONO
ED VK1NBH 02 62512312

• **Philips FM 900** 2 metre radio, long remote cable, with Motorola power supply $125 ono Ed VK1NBH 02 6251 2312

• **Free to good home:** model 15 TTY, separate paper tape reader and punch, with spare tape and TTY paper rolls. The TTY is on a stand with current loop power supply.
Contact John VK2KJB 02 6284 2742 phone /fax.

FOR SALE - NSW

• **Kenwood TS830S** TCVR, MC-60 desk mic SP230 speaker, AT 230 ATU, Drake TV3300LP low pass filter. All in very good condition with manuals and original packing. $750. Alex VK2ATY QTHR Phone (02) 48222756(h) or 0418602666(mob).

• **ICOM IC735** HF Transceiver 100W as new plus mobile mount and mike original carton plus manual $800 ono. MFJ antenna tuner MFJ9490 with dummy load, tapped inductor cross needl SWR meter as new plus manual $125 ono. WG Wolf multiband vertical antenna 10-80M 7.9M plus manual $150ono. Sell separately or lot $1000. John VK2GMR (02) 66461460.

• **Kenwood TS-830S** $640 VF0230 $230. Mic MC.50 $95. Original boxes. Good condition. Laurie VK2JI QTHR (02) 99993993.

• **Yaesu FT-107M** with DMS S/N 0J080220. Yaesu FC-107 S/N OJ050339. Yaesu SP-102 SPK. YM-38 Desk Mic. Narrow Band CW Filter. All in absolute mint condition original manuals and cartons. In storage 6 years. Unused since 1996 (Ccomplete station one price $550) VK2KS (Bill) QTHR 02 4646 1141 E-MAIL g0tgt@wolf.net.au

• **Yaesu FT107M** Mint condition. One owner. YM35 mike service manual inbuilt PS WARC $600 ono. Allan VK2AGR (02)44711059.

• **VFO Kenwood VFO120** with cord and booklet serial 921218 $150 plus freight. Plus - Freq controller Kenwood DFC230 cords and booklet serial 1041409 $250 plus freight. Both perfect condition. Geoff Bastow VK2UB QTHR Armidale (02) 67728287

• **Yaesu FT-7** and FL110 linear amplifier with manuals, mic and cables. Good order. David VK2BDT $350 (02) 48215036.

FOR SALE - VIC

• **Yaesu FL2100B** linear VGC S/No. 6H310370 $550. Kenwood TS120V HF TXCVR S VGC S/ No. 912337 $250. Kenwood TR7200G VHF FM

TXCVR VGC S/No. 540272 $100. DSE 6MX 100W all mode linear VGC $100. Kenwood TS820 HF TXCVR works S/No. 660344 $90. Jeff VK3AKL (03) 97442422.

• **Pantronic SB10** HF 2-30 MHz 10 CH XTAL Locked, remote head, remote ATU, valve PA, 100W output, works OK. Best offer. Des VK3VDP (03)51571784 QTHR.

• **ICOM IC-271A** 2M all mode (s/n 01983) $620 ICOM IC-735 HF txvr (s/n 20322) $750 RF Concepts 2M/70CM High Power FM Amplifier (s/n 56R03-00078) $600 YAESU FT-75B HF txvr (s/n 7J100292) incl AC & DC power supplies, external VFO $200 Steve VK3DBL 0411077187

• **Military radios** for sale. R210 receiver, C11 transmitter, ATU#7 tuning unit, 24V rotary supply unit, J1 battery and 4-way interconnect boxes, headphones and wiring harness, $350. B47 VHF transceiver $50. A510 HF manpack transceiver with carry case $150 ono. Glenn VK3FFX QTHR (03) 95319301 a/h.

• **Video enhance**r and audio mixer with power supply. New in carton $85. Max VK3GMM (03)59852671

• **Antenna Hi-gain** TH6DXX 6 element tri-band excellent antenna erected 1994. Dismantled August 1999. Assembly instructions book $300 ono. VK3CF QTHR (03) 93363985.

FOR SALE - QLD

• **Uniden 2020** needs good home. P/S doubtful. Lots of homebrew parts inside. Pick up and take away. Alan VK4BWG QTHR (07)34083652

• **IC-245** all mode 2 meter transceiver. Serial no.03022 with manual. VGC. $240 neg. 4CX25B valve with socket and chimney. (All new Eimac). $100 neg. Gwen VK4CB QTHR (07) 32027137.

• **Himound morse key** HK-706 near new condition $45. I will pay postage. Sally VK4SHE QTHR (07)47788642 or email rgrattid@ozemail.com.au

• **Spectrum analyser** HP8558B in HP182 mainframe. 0.1 to 1500 MHz. 240VAC. $2100. **Universal counter HP5315A**. many features. Counts to 1300 MHz in UHF input; period, time interval, delay & ratio to 100 MHz in inputs A & B. 8 digit display & exponent & overflow. Battery & TCXO options. 240VAC. portable. Handbook. $450. **Kenwood TS130 transceiver**, Mic, DC lead, handbook. $375. Gary VK4AR QTHR 07 33531695.

FOR SALE - SA

• **Kenwood TS-130s**, ATU-130, VFO-120, MC-50 desk mic, mobile bracket, service and all other manuals. Excellent condition $830 ono. 8EL Log Periodic Antenna $400. Sell complete for $1100. More for sale. Paul VK5MAP QTHR Phone/fax (08)86512398

• **Deceased Estate**

20 amp VK **Power Master Power supply** $120. **Electrophone** 11amp peak power supply $120 Icom IC207 VHF/UHF Transceiver $580, **Pearce Simpson super Cheetah Mark 3 CB transceiver** s/n 2091534 $130, **Nevex power meter W540** from 140/525 MHZ $130 VK6HAI XYL Mrs J Browner on 9342 3555 or VK6NN L K Browner 08 94284852

FOR SALE - TAS

• **IC-551 6 metre rig**. Band pass tuning, FM unit. Near mint. S/no.01268. Extras. $500 ono. IC-451 70cm rig. Near mint. S/no.01486. $500 ono. 70cm PA modules 50w $89, 10w $69. Mil spec. VK7JB (03)64923197

• **Valves**. TX 811A, 866, 830B, 828, 5763. RX 2A3, 3BP1. Many others. A & R XFMR 1KV-O-1KV 250MA. FTDX401. Prop. Pitch motor. Eddystone variables. Collins mech. Filter. 75A3 VFO. SCR 522, unmod. Siemens teleprinter. Command TX's 3-4 5.3-70 Mc/s. Meters, XTALS. Good quality misc. items. 2021 Murchison Hwy Wynyard 7325. Ken VK7AI QTHR (03)64381226

MISCELLANEOUS

• **GIFT.** Box of old crystal set components. Coils, variable capacitors, headphones etc. Free to collector/restorer. Alan VK3AL, 96901691. QTHR. Email: alanell@netlink.com.au

http://www.hamsearch.com
a not-for-profit site that is a search engine for hams

TRADE ADS

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For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boanyo Ave Kiama).

www.cyberelectric.net.au/~rjandusimports

Agencies at: Assoc TV Service, Hobart: Truscotts Electronic World, Melbourne and Mildura: Alpha Tango Products, Perth: Haven Electronics, Nowra

• **WEATHER FAX programs** for IBM XT/ATs *** "RADFAXZ" $35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" $45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, + 137 MHz Receiver. *** "MAXISAT" $75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add $3.00 postage. ONLY from M. Delahunty, 42 Villers St, New Farm QLD 4005. Ph 07 358 2785.

SILENT KEY

John Lewis VK3HW

Many would have seen on 'Burke's Backyard' that John Lewis died suddenly on 21 June. John was a well-known DXer throughout his ham radio career that began in 1948. He was particularly well-known in the United Kingdom and the USA. Over the years he used all the HF bands but his preference was 20 and 40 metres.

John had the great ability to turn a schematic into a well-engineered piece of equipment with a finish approaching commercial standards. The large shack and antenna at Ballarat was the complete expression of his vision, drive and construction abilities which extended to a detailed study of Log Periodic antennas which culminated in the 40-10 metre monster which proved the practical aspect of this broad band design.

In recent years he moved to Clifton Springs where, in addition to ham radio, he returned to earlier interests of gardening and fishing.

Bill Sadler VK3AMH

The WIA regrets to announce the recent passing of :-

A H	SANDILANDS	VK2BS
E G	MACDONALD	VK2BTY
J L	LEWIS	VK3HW
(ANDY)	EKLAND	VK4AD
(BERT)	BOEKHOLT	VK4LB
K (JOHN)	MCKECHNIE	VK6AMK
M G	PEGLER	VK6APM
W	DE HOOG	VK7JW

Email Hamads

If you are emailing your Hamad, the method <u>much</u> preferred by our type setters, could you please assist by following these two guidelines.

1

Please use upper and lower case as in normal text in the Hamad.

2

Please enter the words directly into the body of the email.

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

Division	Address	Officers		News Broadcasts Note: All times are local. All frequencies MHz.	Fees
VK1 ACT Division GPO Box 600 Canberra ACT 2601	President Secretary Treasurer	Gilbert Hughes John Woolner Les Davey	VK1GH VK1ET VK1LD	VK1WI: 3.570 LSB, 146.950 FM each Sunday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org	(F) $72.00 (G) (S) $58.00 (X) $44.00
VK2 NSW Division 109 Wigram St Parramatta NSW (Office hours Mon-Fri 1100-1400) (PO Box 1066, Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525	President Secretary Treasurer Web: *http://marconi.mpce.mq.edu.au/wia* e-mail: *vk2wi@ozemail.com.au*	Michael Corbin Eric Fossey Eric Van De Weyer	VK2YC VK2EFY VK2KUR	From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.	(F) $69.00 (G) (S) $56.00 (X) $41.00
VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 (Office hours Tue & Thur 0830-1530) Phone 03 9885 9261 Fax 03 9885 9298	President CEO Secretary Web: *http://www.tbsa.com.au/~wiavic/* e-mail: *vk3wi@rint.com.au*	Jim Linton Barry Wilton Peter Mill	VK3PC VK3XV VK3APO	VK3BWI broadcasts on the 1st and 3rd Sunday of the month at 8.00pm. Primary frequencies, 3.615 LSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site.	(F) $75.00 (G) (S) $61.00 (X) $47.00
VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 5496 4714	President Secretary Treasurer e-mail: *wiaq@brisbane.dialix.com.au* Web: *http://www.wiaq.powerup.com.au*	Colin Gladstone Peter Harding Alistair Elrick	VK4ACG VK4JPH VK4FTL	VK4WIA: 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 14.342 MHz SSB, 21.175 MHz, 28.400 MHz SSB, 29.220 MHz FM, 53.725 MHz FM, 147.000 MHz FM, 438.500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3.605 MHz SSB & 147.000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET.	(F) $74.00 (G) (S) $60.00 (X) $46.00
VK5 South Australian Division (GPO Box 1234 Adelaide SA 5001) Phone 08 8294 2992	President Secretary Treasurer	Jim McLachlan David Minchin John Butler	VK5NB VK5KK VK5NX	VK5WI: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mid North, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.	(F) $75.00 (G) (S) $61.00 (X) $47.00
VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873	Acting Pres. Secretary Treasurer Web: *http://www.faroc.com.au/~vk6wia/* e-mail: *vk6wia@faroc.com.au*	Cliff Bastin Christine Bastin Bruce Hedland-Thomas	VK6LZ VK6ZLZ VK6OO	VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.825, 3.560, 7.075, 14.116, 14.175, 21.185, 29.680 FM, 50.150 and 438.525 MHz, country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton and 146.900 (R) Mt William (Bunbury). Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.563 and 438.525 MHz : country relays on 146.350 and 146.900 MHz.	(F) $62.00 (G) (S) $50.00 (X) $34.00
VK7 Tasmanian Division PO Box 271 Riverside TAS 7250 Phone 03 6327 2096 Fax 03 6327 1738	President Secretary Treasurer Web: *http://www.wia.tasnet.net*	Ron Churcher Tony Bedelph John Bates	VK7RN VK7AX VK7RT	VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.	(F) $74.00 (G) (S) $60.00 (X) $46.00
VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).				**Membership Grades** **Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR (X)** **Three-year membership available to (F) (G) (X) grades at fee x 3 times.**	

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The new Yaesu FT-100 features HF/6m/2m/70cm transmitter coverage with 100W RF output on HF and 6m, 50W on 2m and 20W on 70cm, plus you can easily mount the detachable front panel using an optional lead (YSK-100) for more convenient mobile installations. Powerful interference fighting features such as a DSP based Bandpass filter, Notch filter and Noise reduction together with an IF based Shift control, all aid reception quality during tough conditions. A Speech Processor and VOX facility are provided for SSB users and an internal Electronic keyer is provided for CW operation. Also included are Dual VFOs, built-in CTCSS encode, 300 memory channels, all-mode operation (SSB, CW, AM, FM, AFSK, Packet 1200/9600bps), 100kHz-970MHz receiver (cellular locked-out), and options for additional AM and CW IF filters.

The FT-100 is supplied with an MH-42B6JS hand mic, DC power lead and comprehensive instructions.

D 3285

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D 3286

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- Effective IF noise blanker
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